

Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

Katherine R. Schwenk

Date

Language Use and Proficiency as Measures of Acculturation Among Immigrants to the United States

By

Katherine R. Schwenk
Master of Public Health

Global Health

Solveig A. Cunningham, PhD
Committee Chair

Language Use and Proficiency as Measures of Acculturation Among Immigrants to the United States

By

Katherine R. Schwenk

Bachelor of Arts
Purdue University
2009

Thesis Committee Chair: Solveig A. Cunningham, PhD

An abstract of
A thesis submitted to the Faculty of the Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Global Health
2020

Abstract

Language Use and Proficiency as Measures of Acculturation Among Immigrants to the United States
By Katherine R. Schwenk

Background: In the United States, the sheer growth in migration and the diversity in migrant's origins, socioeconomic status, and motivations have resulted in host communities becoming more socially, culturally, religiously, and ethnically diverse. Becoming part of a new community or society is an integral and complex part of the migration phenomenon. This interaction of cultures and the resulting changes have become collectively known as acculturation. Language, in particular, is a fundamental factor in the acculturation process. Language is critical for navigating access to health care, housing, education, employment, and other resources. Measures of English proficiency and language use can directly assess acculturation.

Objectives: To assess which languages immigrants use and when, how well they understand English, and how measures of language are associated.

Methods: Princeton University's New Immigrant Survey (NIS), is a longitudinal, nationally representative survey of 8,573 immigrants to the United States who became legal permanent residents between May and November 2003. The NIS was used to examine the contexts in which languages are spoken, English proficiency, English media use, and associations between language variables. Descriptive statistics, Spearman test for association, and principal component analyses were conducted using sampling weights of the survey's adult sample.

Results: Non-English languages were strongly favored at home (80.42%, weighted n=5072), with spouses (70.37%, weighted n=4438), and with friends (74.55%, weighted n=4702). Languages spoken at work were more evenly split, with 42.82% (weighted n=2701) using English. Approximately half of respondents (49.09%) said that they understood spoken English either 'well' (26.91%, weighted n=1697) or 'very well' (22.18%, weighted n=1399). There was a strong positive correlation (0.66) between the interviewer's perception of the respondent's English and speaking and understanding English.

Conclusions: Those who are proficient in English are more likely to use it in various language speaking contexts and are more likely to use it in public contexts (work and religious services) than personal contexts (home, with friends and with spouses). Those who are proficient in English tend to be younger, educated, and have lived in the United States from an earlier age.

Language Use and Proficiency as Measures of Acculturation Among Immigrants to the United States

By

Katherine R. Schwenk

Bachelor of Arts
Purdue University
2009

Thesis Committee Chair: Solveig A. Cunningham, PhD

A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Global Health
2020

Acknowledgements

I would like to thank Dr. Solveig A. Cunningham, my thesis chair, for her support and guidance. Thank you for helping me through the ups and downs of this process, including, but not limited to, a topic change, principal component analyses, and a pandemic. Your knowledge, experience, and encouragement have been invaluable, not only during this project but during my time at Rollins as a whole.

I would also like to thank my friends at Rollins. I'm not sure I will ever be able to express the profound gratitude I have for you and your presence in my life. I am in awe of your dedication, compassion, love, and humor. I wouldn't pick anyone else to be stuck with in the Gracemont; you are all the human equivalent of tots.

Lastly, I would like to thank Paka, second author, life coach, cat. Your insistence on napping on the keyboard might not have been great for productivity, but it was perfect for perspective. ჩემი გული ხარ.

Table of Contents

<i>Introduction</i>	1
<i>Literature Review</i>	4
Migration	4
Acculturation	5
Language and Acculturation	10
Language Acquisition	14
<i>Data and Methodology</i>	26
Survey Design	26
Language Design	28
Variables	29
Methods.....	33
<i>Results</i>	37
Background Characteristics	37
Contexts of Language Use	39
Self-Ratings of English Proficiency	41
Comparison of Indicators of Language Use.....	43
<i>Discussion</i>	45
Major Findings.....	46
Strengths and Limitations.....	51
Public Health Implications and Recommendations	52
<i>References</i>	54
<i>Tables and Graphs</i>	62

Introduction

With 19% of the world's total immigrant population, the United States has more immigrants than any other country in the world (United Nations Population Division, 2019b). Compared to the "bursts" of immigrants in the early 1900s, the immigration flow today is mostly continuous (Sam & Berry, 2006). Since 2001, the number of legal immigrants has remained steadily above 1 million per year (United States. Department of Homeland Security, 2017). The United States will continue to receive over 1 million legal and 350,000-500,000 non-legal immigrants annually, barring any significant changes in the economy or immigration laws (Sam & Berry, 2006). Immigrant diversity in the United States has changed dramatically due to changes in immigration brought about by the Act of 1965, and the United States is more diverse than ever in regards to race, class, and country of origin, with nearly every country being represented (Sam & Berry, 2006; United Nations Population Division, 2019b).

The sheer growth in migration and the heterogeneity in migrant's origins, socioeconomic status, and motivations have resulted in receiving societies becoming more socially, culturally, religiously, and ethnically diverse (International Organization for Migration, 2019). Becoming part of a new community or society is an integral and complex part of the migration phenomenon (International Organization for Migration, 2019). The interaction of cultures and the resulting changes have become collectively known as acculturation (Sam & Berry, 2006). Broadly, acculturation is a complex and multidimensional process of adopting the language, customs, behaviors, and attitudes of a host culture by an immigrant (Lee et al., 2013). Throughout the literature, there are multiple definitions and models of acculturation (and related concepts of

integration, adaptation, and assimilation). However, regardless of definition, there is “ample evidence that cultural, linguistic and psychological changes occur among populations undergoing acculturation” (Collier, 2017).

Immigrants are often looked at individually, under the assumption that acculturation is the result of individual choice and disregarding contextual or demographic factors (Schwartz et al., 2010). To best understand acculturation, it needs to be examined in the context in which it occurs including “characteristics of the migrants themselves, the groups or countries from which they originate, their socioeconomic status and resources, the country and local community in which they settle, and their fluency in the language of the country of settlement” (Schwartz et al., 2010).

Language, in particular, is a fundamental factor in the acculturation process (Portes & Rumbaut, 2006). Immigrants who arrive and do not possess adequate proficiency in the host society’s language will face ‘formidable barriers’ in acculturation (Vries, 1999). Language is critical for navigating access to health care, housing, education, employment, and other resources (International Organization for Migration, 2019). A review of the literature concluded that several key language factors result in success in acculturation, including the strength of English language skills, time in school and strength in first and second language skills (Collier, 2017).

According to Chrisman, measures of English proficiency are indicators of social mobility and can directly assess acculturation (Chrisman et al., 2017). When examining the measurement of acculturation, Kang looked at English use and proficiency by asking “How much do you speak English at home, at school, at work, at prayer, and with friends?”, “How much do you view, read, or listen to English on TV, in film, on the radio, and in literature?” and “How fluently do you

speak, read, write, and understand English?” (Kang, 2006). The study found that English proficiency and use were better predictors of acculturation than other measures (Kang, 2006). Kang concluded that “language use and proficiency reflect the differences in language environments to which ethnic minorities are exposed, and these differences may affect their levels of acculturation and the degree of their involvement in mainstream culture,” (Kang, 2006).

As shown in the literature, understanding the ways in which language is gained, used, and measured can lead to a stronger understanding of acculturation, which is crucial in reducing obstacles faced by immigrants. The New Immigrant Survey is a longitudinal, nationally representative survey of immigrants who became legal permanent residents between May and November 2003. Using the New Immigrant Survey, this paper will examine the settings of English language use and English proficiency by immigrants to the United States. The objectives of this study are:

1. Examine language use by immigrants in the contexts of home, work, religious services, with friends, and with spouses
2. Examine self-ratings of English proficiency among immigrants
3. To compare indicators of language use and to examine how they relate to each other

Literature Review

Migration

As of 2019, the worldwide number of international migrants has reached 272 million people, or roughly 3.5% of the global population (United Nations Population Division, 2019a). Twenty countries account for two thirds international migration destinations (United Nations Population Division, 2019a). Recently, voluntary migration is now outpaced by forced migration, such as refugees and asylum seekers, and has increased by over 13 million since 2010 (United Nations Population Division, 2019b). International immigrants tend to be young, with 14% under the age of 20 and 74% between the ages of 20 and 64 (United Nations Population Division, 2019b). Women now comprise 47.9% of international migrants globally (United Nations Population Division, 2019a).

The largest number of international immigrants, 51 million, or 19% of the world's total, live in the United States (United Nations Population Division, 2019a). While most international immigrants tend to move to countries in the same geographic area as where they originated from, 98% of those in North America are from different originating regions (United Nations Population Division, 2019a). In the United States, the top five sending countries are Mexico, China, Cuba, India, and the Dominican Republic (Zong et al., 2019). The diversification of immigration flows to the United States is due to changes in immigration law, growing economic and military presence in Asia and Latin America, immigration networks, and migration histories (Zong et al., 2019) Within the U.S. the top states for immigrants to reside in are California, Texas, New York, Florida, and New Jersey (Zong et al., 2019). However, North Dakota, Delaware,

Tennessee, South Dakota, and Kentucky are experiencing the most percentage growth of immigrants (Zong et al., 2019).

Motivations for international migration are complex and have biological, psychological, and cultural foundations (Furnham & Bochner, 1986). Studies tend to focus and make assumptions based on demographic, historical, and structural variables (Furnham & Bochner, 1986). Economic motivation, in particular, is a common assumption, but, while important, people have been shown to be more than 'economic maximizers' (Furnham & Bochner, 1986). One limitation in the study of social motives is the reliability of the self-reports in this area (Furnham & Bochner, 1986). People will not or cannot report their true motives for various reasons such as recall bias, social motivations, or true motives not matching official stated or funded reasons (Furnham & Bochner, 1986). Additionally, while it is possible that previous periods of migration were less complex from a motivation standpoint, today's current studies on motivation are too simplistic in conception and execution to capture an individual's motives (Furnham & Bochner, 1986). The decision to migrate is not a sum total between the positive and negative of economic, political and social factors, but a variety of reasons (Furnham & Bochner, 1986). Motivation should not be examined through solely an individual lens; the decision to migrate is "shaped by many people, including family, friends, employers, their access to information, and the various policies of the countries to which one might migrate," (Furnham & Bochner, 1986).

Acculturation

Today, with the largest number of immigrants in history and growing cultural diversity, most individuals deal with at least two or more cultures (Titzmann & Fuligni, 2015). The United States

is home to people from 181 different countries (Titzmann & Fuligni, 2015). The interaction of cultures and the arising changes have become collectively known as acculturation (Sam & Berry, 2006). Broadly, acculturation is a complex and multidimensional process of adopting the language, customs, behaviors, and attitudes of a host culture by an immigrant (Lee et al., 2013). It has also been described as “the entire domain of cultural adaptation, whereby individuals move along a continuum of involvement in their culture of origin to involvement in their host culture,” (Tieu & Konnert, 2015). Others have described it as “culture change that is initiated by the conjunction of two or more autonomous cultural systems (Berry, 2006). Regardless of definition, there is “ample evidence that cultural, linguistic and psychological changes occur among populations undergoing acculturation” (Collier, 2017).

The first acculturation studies originated in the desire to understand the effects of European domination on colonial and indigenous people (Berry, 2006). Studies then transitioned to examine how both voluntary and involuntary immigrants changed after settling into their new receiving countries (Berry, 2006). In 1936, anthropologists Redfield, Linton, and Herskovitz outlined the first widely-used acculturation definition as “those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups,” (Redfield et al., 1936). They distinguished their definition of acculturation from assimilation, which is a phase of acculturation, and culture-change, of which acculturation is an aspect (Redfield et al., 1936).

Sociologist Milton Gordon, in 1964, developed a linear assimilation model that focused on the process of acculturation on a single continuum (Collier, 2017; Salant & Lauderdale, 2003). Under this unidimensional model, immigrants experience either cultural maintenance, the degree that

a person maintains their origin culture, language, and identity, or cultural adoption from the culture of settlement (Celenk & Van de Vijver, 2011). The proliferation of terms like “Americanization,” “westernization,” and “urbanization” to depict the immigrant experience reflected the unidimensional viewpoint of acculturation in sociology and epidemiology (Salant & Lauderdale, 2003). A major critique of the unidimensional model was that acculturation was conceptualized as a rejection of one’s origin culture in an irreversible process of moving away from one culture to another (Celenk & Van de Vijver, 2011).

With the growing acceptance of cultural pluralism came a more multidimensional view of acculturation (Szapocznik et al., 1980). This bilinear model of acculturation focuses on acculturation strategies, which are based on two issues all acculturating people face (Berry, 2006). The first issue is the maintenance of culture and identity of one’s minority or native culture, and the second is the participation in the larger society and other ethnocentric groups (Berry, 2006). From these two attitudinal dimensions, four acculturation strategies emerge, integration, assimilation, separation, and marginalization (Berry, 2006). Integration occurs when there is a desire to maintain one’s original culture alongside interactions with other groups (Berry, 2006). Assimilation is the adoption of the new culture with no maintenance of one’s original culture (Berry, 2006). In contrast, separation happens when an individual rejects interaction with new groups and culture and only maintains their original culture (Berry, 2006). Lastly, when there is little interest in cultural maintenance and interaction with others, marginalization occurs (Berry, 2006).

Two factors that act as predictors of acculturation strategy are acculturation conditions and domain specificity (Arends-Tóth & van de Vijver, 2004). Acculturation conditions are group and

individual-level factors that define the context that affects the process of acculturation (Arends-Tóth & van de Vijver, 2004). These conditions can be perceived or objective discrimination, political context, characteristics of the immigrant group, and personal characteristics (Celenk & Van de Vijver, 2011).

Domain specificity refers to the difference in acculturation behaviors and orientations in various life domains and contexts, mainly between public and private life (Arends-Tóth & van de Vijver, 2004). Arends-Tóth and van de Vijver found in a study of 147 Turkish-Dutch adults that there was a preference to adapt Dutch culture more in the public, functional and utilitarian, domain and less in the private, social-emotional and identity, domain but cultural maintenance was valued in both domains (Arends-Tóth & van de Vijver, 2004). They also found that domain specificity is shaped by specific life domains (Arends-Tóth & van de Vijver, 2004). For example, education and language belong to the public domain, while child-rearing and marriage belong to the private (Arends-Tóth & van de Vijver, 2004).

Weaknesses of acculturation focus on the complex nature of culture and acculturation. According to Salant and Lauderdale, there is a failure to incorporate contextual issues into acculturation research (Salant & Lauderdale, 2003). Socioeconomic factors need to be considered along with migration histories to account for the increased diversity between and among ethnic groups (Salant & Lauderdale, 2003). This diversity can make it more difficult to compare findings between studies (Salant & Lauderdale, 2003). Limitations on the generalizability of acculturation studies stem from an emphasis on single groups and short measures (Celenk & Van de Vijver, 2011). For example, much of the theoretical work on acculturation focuses on Hispanic immigrant populations to the United States, which can limit its applicability to other ethnic groups (Salant

& Lauderdale, 2003). More broadly, cultural identity and practices are dynamic and complex constructs and “has not been a consistent conceptual and operational representation of the process of cultural adaptation,” (Tieu & Konnert, 2015).

In their assessment of acculturation measures, Celenk and Van de Vijver examined 50 publicly available self-report acculturation instruments from English peer-reviewed journals’ electronic databases (Celenk & Van de Vijver, 2011). They found that 60.9% of acculturation instruments are designed for a specific target group, particularly various ethnic groups in the United States such as Hispanic-Americans, Asian-Americans, Native Americans, etc. (Celenk & Van de Vijver, 2011). 34% target specific age groups, with 14% for adults, 12% for youth and adolescents, and 8% for children (Celenk & Van de Vijver, 2011). The majority of measures tend to be short and assess behavioral (76.6%) and psychological (64.9%) acculturation outcomes (Celenk & Van de Vijver, 2011). Acculturation conditions, such as “I have been discriminated against because I have difficulty speaking Spanish,” and orientations, such as “I would prefer to live in an American community,” were each present in 50.5% of the measures (Celenk & Van de Vijver, 2011). Unidimensional models make up 41.5% and bidimensional models 58.5% (Celenk & Van de Vijver, 2011). There is adequate internal consistency in most scales, but information on cross-cultural validity has not been reported (Celenk & Van de Vijver, 2011).

Acculturation measurements are not without limitations and critiques. One limitation in trying to measure acculturation is due to the instruments used being only dual-cultural and unilinear, with one end of the continuum measuring adherence to an origin culture and other end measuring adherence to a single new culture, leaving no room for a multicultural approach (Collier, 2017). Another limitation is that only a small part of the acculturation process is captured

by the measures used, with acculturation contexts and conditions often overlooked (Celenk & Van de Vijver, 2011). As observed in Tieu & Konnert 2015, it is essential to note that many studies use acculturation “as proxies (e.g., English proficiency) rather than specific measures of acculturation/enculturation,” (Tieu & Konnert, 2015).

Language and Acculturation

Although language is only one factor in the acculturation process, it is a fundamental one (Portes & Rumbaut, 2006). Of the 44.2 million immigrants over the age of 5 in the U.S., approximately 48% are considered Limited English Proficient (Zong et al., 2019). A review of the literature concluded that several key language factors result in success in acculturation, including the strength of English language skills and strength in first and second language skills (Collier, 2017). Immigrants who arrive and do not possess adequate proficiency in the host society’s language will face ‘formidable barriers’ in acculturation (Vries, 1999).

According to Smits and Gündüz-Hoşgör, ethnic groups may be unified by speaking their native language in their new homes and communities but can also become isolated from the dominant language portion of the population which in turn limits their access to resources (Smits & Gündüz-Hoşgör, 2003). Fluency in the dominant language can be viewed as a type of linguistic capital and can contribute to social mobility and stratification (Smits & Gündüz-Hoşgör, 2003). Linguistic capital can be converted into other forms of capital, such as cultural, social, economic, or symbolic, which can be valuable in gaining access to education, healthcare, and employment. (Hannum & Cherng, 2014). Those who cannot speak the dominant language “have less access to written and spoken sources, cannot fulfil official jobs, are restricted in their relationships to their

social group and depend on others for information that may be important for them,” (Smits & Gündüz-Hoşgör, 2003). Immigrants to the United States who are more fluent in English have lower unemployment rates and higher salaries (Hannum & Cherng, 2014). Even accents and non-standard dialects can lead to negative perceptions, discrimination, and barriers when accessing resources (Hannum & Cherng, 2014). A study of Mexican Americans using the 1979 National Chicano Survey found that those who spoke English with an accent, regardless of fluency, earned less than those who spoke without an accent (Hannum & Cherng, 2014).

Language Brokering

Upon arrival in the United States, the process of acculturation begins immediately for immigrant families who must navigate new cultural norms, environments, values, and languages (Morales & Hanson, 2005). Parents commonly rely on more acculturated members of their families and social networks to help them navigate cultural and linguistic divides (Martinez et al., 2009). Language brokering is the practice of translating and interpreting for everyday situations by those with no formal translation training (Tse, 1996). It is also sometimes referred to as ‘natural translation,’ family interpreting,’ or ‘paraphrasing’ (Martinez et al., 2009). Language brokering is not simply bilingualism; it is the acquisition of a new language by necessity and survival (Morales & Hanson, 2005).

Studies show that the majority of children in immigrant families act as language brokers regardless of cultural background, and start doing so within 1 to 5 years of arrival in the United States (Morales & Hanson, 2005; Tse, 1996). Children commonly start between the ages of 8 and 12, tend to be the oldest child, and are primarily female (Morales & Hanson, 2005). Language

brokering occurs in a wide variety of situations such as education, healthcare, business (Martinez et al., 2009). It can also include translating documents like bank statements, immigration forms, and job applications. These scenarios often leave children responsible for their family's access to critical services, information, and resources (Martinez et al., 2009; Morales & Hanson, 2005).

These responsibilities have both positive and negative consequences for the entire family (Tse, 1996). Language brokers have reported increased confidence, maturity, and independence, along with a strengthened relationship with their parents (Tse, 1996). Additionally, language brokers felt that brokering improved their language skills and pushed them to seek out linguistic resources and peers (Tse, 1996). Conversely, brokering adds stress and can place children in positions they may not be developmentally ready for (Martinez et al., 2009). Brokers are expected not only to interpret language but also cultural norms, leading children to become 'cultural agents' for their families. (Martinez et al., 2009). This can lead to parents becoming disempowered and deferring crucial decisions to their children (Martinez et al., 2009).

Language brokering is a dynamic process that is influenced by context, frequency, and the amount of interpreting brokers do (Anguiano, 2018). It also allows researchers to examine the differences in acculturation in families (Martinez et al., 2009). When children who act as language brokers increase their cultural and linguistic at a faster pace than their parents, a gap in acculturation called differential acculturation occurs (Martinez et al., 2009). Families with monolingual parents and bilingual children tend to have higher levels of differential acculturation than those where a parent is also bilingual (Martinez et al., 2009). Pease-Alvarez found that this rapid rate of language acquisition for children leads to a language shift to English use and

proficiency, even when Spanish was the predominant language with limited English exposure (Tse, 1996).

Language Shift

This change from the everyday use of one language to another is known as language shift (Vries, 1999). Language shift occurs when minority language groups encounter more dominant groups, which can happen on societal or individual levels (Tse, 2001). Fishman outlined the process over three generations; the first generation speaks their native language at home while attempting to learn the target language, the second generation has a combination of high-level English and limited native language at home, and the third generation speaks native-level English and has limited or absent native language skills (Tse, 2001). Language shift can occur within an individual's lifetime, with native language attrition starting as early as preschool (Tse, 2001).

The leading theory for why language shift occurs is power imbalances between cultural groups, with one dominating others in multiple spheres, including language (Tse, 2001). For example, native-born Americans pressuring immigrants to English, and only English, is a key factor in language shift. (Tse, 2001). Groups, such as immigrants and indigenous populations, often lack the political, social, and economic power to influence policies and funding that control the availability of non-English services and resources (Tse, 2001). This differential in power and expectations of homogeneity lead to implicit and explicit policies (Tse, 2001). This is exemplified in the rise of foreign language and bilingual education for the English monolingual majority, while heritage speakers often have to take courses to regain proficiency in their native language (Tse, 2001).

Another prevailing theory for the cause of language shift is the perception of prestige associated with cultural identities (Tse, 2001). When individuals from minority language groups perceive themselves to be a lower status, they may intentionally distance themselves from their group in favor of the perceived more prestigious majority group (Tse, 2001). The perception of a language group is influenced by the number of social-group memberships individuals have, the level of ease in moving between those groups, group demographics, and the level of representation the group has in media, government, and industry (Tse, 2001). It is also thought that over time, language minorities change their perceptions and favor their minority culture and language later in life (Tse, 2001).

Language Acquisition

Second Language Acquisition Models

Early second language acquisition (SLA) theory was based on behaviorism, a theory that posited that environment, and therefore repetition and mimicry, was the most important factor in language learning, for both first and second language acquisition (VanPatten & Williams, 2015). Behaviorists theorized that language is acquired through imitation of language speakers in the learner's environment and positive reinforcement of accurate language reproduction (Lightbown & Spada, 2013). From the 1940s to the 1970s, behaviorist theory was the driving force in second language classrooms in the United States (Lightbown & Spada, 2013). The focus in the classroom was on imitation, rote memorization, habit formation, and repetition of dialogues and sentence patterns (Lightbown & Spada, 2013).

However, research began to show that behaviorism could not explain errors made by either first language (L1) or second language (L2) learners (VanPatten & Williams, 2015). During first language acquisition, children's speech contains more complex grammatical structures than can be learned through imitation and analogy (VanPatten & Williams, 2015). Children also acquire "grammatical features in fixed orders that do not vary according to child, context, caregiver behavior, or any other external influence" (VanPatten & Williams, 2015). For second language learners, grammatical structures are also developed in a predictable order (VanPatten & Williams, 2015). Additionally, behaviorism assumed that the formation of habits during L1 acquisition would impact the new habits needed for learning a second language, but researchers found that errors made by L2 learners were not predictable based on their native language (Lightbown & Spada, 2013).

The innatist perspective began to emerge after Noam Chomsky's 1959 review of B.F. Skinner's behaviorist work *Verbal Behavior* (Lightbown & Spada, 2013). Chomsky theorized that we as humans all have innate Universal Grammar that we are biologically programmed to understand (Lightbown & Spada, 2013). He wrote that children could innately understand the underlying rules of language systems by being exposed to samples of a language and then learn how the language uses these rules (Lightbown & Spada, 2013). Although Chomsky did not specifically discuss Universal Grammar in the context of second language learners, Lydia White, Vivian Cook, and other linguists maintain that second language acquisition is best understood using a Universal Grammar perspective (Lightbown & Spada, 2013). They argue that complex grammar structures cannot be learned through imitation and memorization alone and that

Universal Grammar must be a part of second language acquisition as well (Lightbown & Spada, 2013).

Influenced by Chomsky's theory, Stephen Krashen's Monitor Model has become perhaps the most influential model in second language acquisition (Lightbown & Spada, 2013). The Monitor Model is comprised of five interrelated hypotheses (Lightbown & Spada, 2013). The Acquisition-Learning hypothesis suggests that acquisition occurs as we encounter samples of language and is spontaneous and unconscious (VanPatten & Williams, 2015). Conversely, learning happens through explicit attention to rules and forms (VanPatten & Williams, 2015). Second, the Monitor hypothesis is the use of learned language in monitoring, polishing, or editing, acquired language (Lightbown & Spada, 2013). The Natural Order hypothesis states that, like first language acquisition, second language acquisition follows an expected order, and rules that are easiest to learn are not automatically the first acquired (Lightbown & Spada, 2013). Fourth, the Comprehensible Input hypothesis suggests that language acquisition happens when the learner is exposed to language that is slightly beyond their current level, based on vocabulary, grammar, pronunciation, while still being comprehensible (Lightbown & Spada, 2013). Lastly, the Affective Filter hypothesis accounts for instances when learners are exposed to large amounts of input but do not successfully acquire the language (Lightbown & Spada, 2013). Learners who are anxious, uncomfortable, or have a negative attitude, have a metaphorical filter that prevents language acquisition and results in poor learning outcomes (Lightbown & Spada, 2013).

The Monitor Model explains why "what is taught is not always learned, what is learned may not have been taught, and how individual differences among learners and learning contexts is related to the variable outcomes of SLA" (VanPatten & Williams, 2015). However, the Monitor

Model has several critiques (Lightbown & Spada, 2013). Many researchers note that there is no possible way to test the hypotheses empirically and that concepts are inferred but not directly observable (Lightbown & Spada, 2013; VanPatten & Williams, 2015). Additionally, studies have shown that language learners can make progress but may plateau without direct instruction (Lightbown & Spada, 2013).

Some linguists feel that the innatist perspective is better suited for first language acquisition and is an incomplete approach for second language acquisition (Lightbown & Spada, 2013). Since the 1990s, the cognitive perspective has become the predominant approach in second language development (Lightbown & Spada, 2013). Founded on research and theories from cognitive psychology, the cognitive perspective argues that humans learn languages in the same way that we do everything else and general learning theories can explain the “gradual development of complex syntax and for learners’ inability to spontaneously use everything they know about a language at a given time,” (Lightbown & Spada, 2013; VanPatten & Williams, 2015). In second language acquisition, there is an emphasis on learners’ abilities to process and absorb information based on discovery, categorization, and determination of patterns through the use of language (Lightbown & Spada, 2013). The cognitive perspective “draws from and builds on a number of different approaches” and is both associative, a traditionally behaviorist view, and cognitive (Lightbown & Spada, 2013; VanPatten & Williams, 2015).

Common Linguistic Phenomena in SLA

During the process of second language acquisition, several common phenomena can occur across all types of learner demographics, proficiencies, and instruction. The first, coined by

Larry Selinker in 1972, is interlanguage, the linguistic system created by the learner while they are developing second language knowledge (Tarone, 2012). Interlanguages are comprised of characteristics from both a learner's previously learned languages and their target language, and some that seem to be universal to all interlanguages (Lightbown & Spada, 2013). The central tenant of interlanguage is that the language being produced is systematic at every level; it is not a collection of errors, it is a separate dynamic linguistic system that has evolving patterns and rules (Tarone, 2012). Additionally, while sharing similar features, interlanguage differentiates itself from creoles and pidgins. A pidgin is a simplified language, that does not have native speakers, that develops between two or more groups that do not have a common language (Muysken & Smith, 1994). Creoles are pidgins that are spoken as someone's native language (Muysken & Smith, 1994). By comparison, interlanguage is an individual system and is used only by the learner and evolves as the learner progresses (Tarone, 2012). An important focus is that the acquisition and use of an interlanguage are not conscious processes, and learners are generally unable to articulate their rules (Tarone, 2012).

Fossilization

In the development of his concept of interlanguage, Selinker also developed the concept of fossilization, the propensity for learner's interlanguage to stop developing, or plateau, before they reach native-like proficiency (Tarone, 2012). Selinker initially felt that only adult learners dealt with fossilization because they used a more cognitive process, whereas children could avoid it through their innate capacity for Universal Grammar (Tarone, 2012). He viewed fossilization as a permanent state that the vast majority of second language learners would never overcome,

“no matter what the age of the learner or amount of explanation and instruction he receives in the target language” (Zheng, 2010). Since its conception, fossilization has been the subject of numerous interpretations and studies (so much so that one of the main critiques of fossilizations is that despite various definitions and perspectives, it lacks ‘sophistication’ and cannot be measured empirically) (Han & Selinker, 2005). There is an ever-growing list of associated phenomena and resulting explanations that span environmental, cognitive, neurobiological, and socio-affective categories (Han & Selinker, 2005). Ultimately, with the number of dimensions associated with fossilization, any single summation will be insufficient to explain the phenomenon (Han & Selinker, 2005).

Language attrition is the decline or loss of a first or second language in an individual (Köpke, 2004). Linguist Theo van Els classified the types of language attrition into four categories based on language and environment type: “first language (L1) loss in an L1 environment; L1 loss in a second language (L2) environment; L2 loss in an L1 environment; L2 loss in an L2 environment,” (Wei, 2014). There are numerous explanations regarding second language attrition; the most cited are the Markedness Theory, the Retrieval Fail hypothesis, and the Regression Hypothesis (Wei, 2014). The Markedness Theory states that grammatical forms that are more complex and used less frequently are considered marked and are at greater risk of attrition than less marked grammar (Wei, 2014). The Retrieval Fail Hypothesis argues that language is not forgotten but rather becomes inaccessible (Wei, 2014). Speakers are able to recognize words when they see or hear them but do not have the retrieval cues needed during language production to materialize the word themselves (Wei, 2014). Over time, a lack of retrieval cues can lead to attrition (Wei, 2014). The most prevalent is the Regression Hypothesis, which claims that attrition mirrors the

stages of acquisition, meaning that whatever was learned last would be the first to be forgotten and vice versa (Wei, 2014). A related hypothesis is the Critical Threshold Hypothesis, which states that certain levels of acquisition are immune to attrition, or best learned, last out (Bardovi-Harlig & Stringer, 2010). According to Hansen, “the more you know, the less you lose,” and those who report the most language loss have the lowest proficiency to start (Bardovi-Harlig & Stringer, 2010).

Second language attrition is a highly individual process, and each speaker loses different linguistic features and language skills at different rates (Wei, 2014). In L2 populations, there are general phases related to attrition, including acquisition, incubation (a period of disuse or lack of language input), attrition, and relearning (Bardovi-Harlig & Stringer, 2010). Not all speakers will experience each phase or the same order, and the periods of acquisition and attrition may cycle several times for an individual (Bardovi-Harlig & Stringer, 2010). The outcomes of these phases are influenced by the individual’s age, aptitude, and motivation (Bardovi-Harlig & Stringer, 2010).

Individual Factors Associated with SLA

Several non-language factors can influence second language acquisition. One of the most common learner characteristics studied in second language acquisition is age (Lightbown & Spada, 2013). Age is usually framed in the context of Critical Period Hypotheses (CPH), various formulations of the central idea that there is a limited period of development where it is possible to acquire a language to native levels (Birdsong, 1999). While there is no set agreement on what the optimal age range is, it is generally believed the younger, the better because once the period of opportunity has passed, language acquisition abilities steeply decline (Birdsong, 1999). Within

CPH studies, it has been shown that children are slower to learn grammar than adults but can achieve native-like levels of proficiency (Long, 2007). Conversely, adults and older children progress more quickly in the early stages of acquisition, but very few achieve the same levels of proficiency in the long term (Long, 2007). Adult learners tend to have stronger accents, smaller vocabularies and are more prone to making grammatical mistakes (Long, 2007).

There is much debate about the role of CPH in second language acquisition (Birdsong, 1999). Bialystok and Hakuta argue that while earlier is better for second language acquisition, it is “misguided to infer a causal relation between age and attainment” (Birdsong, 1999). They consider linguistic and cognitive factors to be more influential than age and general declines in cognitive abilities due to aging offer a better explanation for issues in second language acquisition (Birdsong, 1999). Researchers have suggested several nonbiological explanations for age variations in second language acquisition, such as motivation, environment, and affective factors (Long, 2007).

Motivation in second language acquisition is often viewed as two parts: the learner’s communicative needs, and their attitudes towards the community of the second language (Lightbown & Spada, 2013). Learners that have social or professional situations that require speaking the second language will place a higher value on proficiency in the language (Lightbown & Spada, 2013). Equally, positive attitudes towards the speakers and community of the second language will increase the willingness to interact (Lightbown & Spada, 2013). In 1972, Robert Gardner and Wallace Lambert defined two types of motivation, instrumental and integrative (Lightbown & Spada, 2013). Instrumental motivation is based on immediate, practical goals such as social, educational, or professional (Lightbown & Spada, 2013). Integrative is the desire to

participate in the culture and achieve personal growth and belonging (Lightbown & Spada, 2013). Traditionally, integrative motivation has been seen as a stronger predictor of learning; however, both types are related to success, and in many cases, it is not possible to distinguish between them (Lightbown & Spada, 2013).

Recent models focus on motivation's dynamic nature and learner's changes over time (Lightbown & Spada, 2013). Zoltan Dörnyei's process model accounts for fluctuations in motivation across time periods, such as a class, year, or lifetime (Dörnyei, 2003). The model consists of three stages, the preactional stage, the actional stage, and the postactional stage (Dörnyei, 2003). In the preactional stage, or choice motivation is the forming of intention and setting goals (Dörnyei, 2003). The actional stage, or executive motivation, is completing tasks and achievements to maintain motivation (Dörnyei, 2003). Lastly, postactional or motivational retrospection is self-appraisal and reaction to performance that influences future activities (Dörnyei, 2003). While studies have found that motivation and success are strongly linked, it is not easy to "determine whether positive attitudes produce successful learning or successful learning engenders positive attitudes, or whether both are affected by other factors," (Lightbown & Spada, 2013).

Personality traits such as anxiety, introversion/extroversion, and the willingness to communicate can also affect second language acquisition (Lightbown & Spada, 2013). Anxiety in SLA is a specific type of anxiety, not related to general anxiety, that is specific to language contexts of speaking, listening, and learning (MacIntyre & Gardner, 1994). It is feelings of apprehension and nervousness while learning and using a second language (Gardner et al., 1997). Studies have shown that "language anxiety is associated with deficits in listening comprehension,

impaired vocabulary learning, reduced word production, low scores on standardized tests, low grades in language courses or a combination of these factors,” (Gardner et al., 1997).

Another personality trait that is studied in SLA is the introversion-extroversion dichotomy (MacIntyre & Charos, 1996). Many researchers claim that because extroverts are more sociable and willing to join in conversations, they are more likely to engage other speakers of the L2 and obtain input and practice (Zafar & Meenakshi, 2012). Extroverts are also thought to attempt a larger “amount and variety of word types and grammatical structures at a higher speech rate,” where they focus more on meaning than form (Zafar & Meenakshi, 2012). Conversely, introverts are more focused on form, vocabulary, grammar, and pronunciation, and perform better in academic settings and other contexts (MacIntyre & Charos, 1996). In general, there is no significant correlation between extroversion and second language success (MacIntyre & Charos, 1996).

Related to the introversion-extroversion dynamic is the willingness to communicate. MacIntyre’s path model argues that a greater perceived competence communicating and a lower level of apprehension around communication leads to a higher willingness to communicate (MacIntyre & Charos, 1996). Introversion often contributes to apprehension and perceived competence and overall self-consciousness (MacIntyre & Charos, 1996). Willingness to communicate can change “with the number of people present, the topic of conversation, the formality of the circumstances, and even whether we feel tired or energetic at a given moment,” (Lightbown & Spada, 2013).

Measuring Acquisition

In terms of measuring SLA for individual or research purposes, self-assessments are the predominant method used for evaluating language acquisition. During acquisition, learners continually assess their own skills, which can aid in the development of learning strategies and motivation (MacIntyre et al., 1997). Many researchers argue that these assessments are accurate in assigning learners to appropriate levels of study without the need for formal testing (MacIntyre et al., 1997). In their 1989 review of the literature, Blanche and Merino found that there is a “consistent overall agreement between self-assessments and ratings based on a variety of external criteria,” which was later corroborated by Stephen Ross in his meta-analysis of self-assessments in second languages (Blanche & Merino, 1989; Ross, 1998).

Blanche’s 1985 review revealed that when comparing self-ratings to objective measures of proficiency, correlation coefficients were typically between .50 and .60, with higher values frequently occurring, showing that self-evaluations carry the same weight as other measures (Blanche & Merino, 1989). Measurements were used for general research as well as continuous assessment in teaching-learning environments (Blanche & Merino, 1989). Of these measurements, ones that were built on ‘concrete linguistic situations’ produced more accurate results than those that focused on global ‘macro-skills’ such as writing or speaking (Blanche & Merino, 1989). However, some studies have shown that the accuracy of self-assessments and actual performance have no statistically significant relationship (Blanche & Merino, 1989).

When self-assessments over or underestimate language ability, it is not always from the speaker’s inability to gauge their aptitude, but may be due to the self-enhancement or self-derogation biases (MacIntyre et al., 1997). The self-enhancement bias is based on positive self-perceptions and the need to find personal satisfaction and self-worth (MacIntyre et al., 1997).

The bias leads speakers to view not only themselves but their abilities in a positive, if unrealistic, light (MacIntyre et al., 1997). Taylor and Brown argue that self-enhancement is beneficial because it motivates learners to invest extra effort into challenging tasks (MacIntyre et al., 1997). Self-derogation happens when speakers systematically underestimate their skills (MacIntyre et al., 1997). Underestimation helps anxious speakers minimize feelings of failure and control anxiety levels while using their second language (MacIntyre et al., 1997). Additionally, without common valid measurement criteria, self-assessments become highly subjective to both speakers and teachers/researchers (Blanche & Merino, 1989). Ultimately, second language acquisition is a complex and individual process that is built on subjective factors that can significantly affect self-assessments (Blanche & Merino, 1989).

Data and Methodology

Survey Design

The New Immigrant Survey (NIS) is a nationally representative longitudinal study of immigrants and their children (Jasso et al., 2017). Those surveyed consisted of legal immigrants who became legal permanent residents (LPRs) in the United States between May and November 2003 (Massey et al., 2017). The adult sample was defined by age and immigration category, covering those who were 18 or older at admission to LPR and who held visas as principals or were an accompanying spouse (Jasso et al., 2017). The term principal denotes someone who has met the visa eligibility criteria set by the United States government for various types of admission, such as spouses of citizens, refugees, workers, and others (Jasso et al., 2017). Visas were also granted to spouses and minor children who were “accompanying or following to join” principal visa holders (Jasso et al., 2017). Excluded from the sampling frame were accompanying children, adult offspring, and non-spouse and non-child relatives; they were considered household members of the sampled immigrants (Jasso et al., 2017).

The NIS drew a sample of 12,488 immigrants and completed 8,573 interviews (response rate of 68.6%) (Massey et al., 2017). Respondents were randomly selected from electronic administrative records compiled by the U.S. Citizenship and Immigration Services (USCIS), formerly the Immigration and Naturalization Service (INS) (Massey et al., 2017). Principal Investigators (PI) then used the inclusion criteria of being 18 at the time of admission to the LPR and holding a visa as a principal, to select the Adult Sample (Jasso et al., 2017). PIs conducted a random-number statistical routine where each immigrant was assigned a sampling number, and

the first x cases were selected in each stratum (Jasso et al., 2017). In an effort to reduce non-response rates, immigrants were contacted as soon as possible after being admitted to LPR (Jasso et al., 2017). Therefore, sampling from the government records was conducted once a month (labeled in the project as a monthly replicate) (Jasso et al., 2017). On average, it took 17 weeks from admission to the interview (Massey et al., 2017).

Duplicates were defined as two or more related individuals being selected into the sample (Jasso et al., 2017). To optimize survey implementation, the PI team further defined three types of pairs selected in the samples as duplicates: “two adults married to each other; two minor children; and a parent and a minor child” (Jasso et al., 2017). Duplicates were identified in both the sampling stage and during survey implementation (Jasso et al., 2017). During the sampling stage, administrative records were used to identify matching addresses and visa types, which could indicate family relationships (Jasso et al., 2017). In the field, duplicates could come from either the same monthly replicate or a later one; in many cases, principals arrived at different dates than their accompanying spouse or child (Jasso et al., 2017). If duplicates were found in the same monthly replicate, the one with the earlier sampling number was retained (Jasso et al., 2017). For duplicates in separate replicates, the one from the earlier replicate was retained (Jasso et al., 2017). In replicates 1-7, replacements were found and added into the subsequent replicate (Jasso). Due to cost restrictions, duplicates from replicate eight were not replaced (Jasso et al., 2017).

An analysis of immigrant’s initial residences, the addresses their Green Cards were mailed to, showed that the immigrants displayed substantial geographic clustering (Jasso et al., 2017). In the sampling frames, 89% of immigrants resided in the top 85 Metropolitan Statistical Areas

(MSAs), regions, defined by the United States Office of Management and Budget, that incorporate a city and its surrounding communities (Jasso et al., 2017; United States Census Bureau, 2018). A further 4 to 5 percent lived in the top 38 counties (Jasso et al., 2017). The geographic sample design included all of the top 85 MSAs and 38 counties and a random sample of 10 additional MSAs and 15 county pairs (Jasso et al., 2017).

The Adult Sample was stratified to gather information on visa categories of interest; the strata were defined as spouses of United States citizens, employment principals, diversity principals, and other immigrants (Jasso et al., 2017). Spouses of United States citizens were under-sampled at nearly half of their actual occurrence (Jasso et al., 2017). Those categorized as employment and diversity principals were oversampled at approximately twice and three times their natural occurrence, respectively (Jasso et al., 2017).

Sampling weights were constructed by dividing the number sampled by the number in the sampling frame for each replicate and stratum to create a sampling fraction (New Immigrant Survey, n.d.). A sampling ratio was then calculated by multiplying each of the 32 sampling fractions by the total sampling frame for all replicates and strata combined (289,478 for the Adult Sample) then divided by the total number sampled in all the replicates and strata combined (12,488 for the Adult Sample) (New Immigrant Survey, n.d.). Finally, the reciprocal of each sampling ratio was calculated (New Immigrant Survey, n.d.).

Language Design

In an effort to maximize response rates and data quality, the NIS was designed so that each respondent could be interviewed in their preferred language (Jasso et al., 2017). To mitigate challenges in questionnaire preparation and field operations, languages were classified into tiers

and then given a different level of ‘treatment’ or level of translation and resources (Jasso et al., 2017). Tiers were based on the “expected origin-country distribution, the expected native-language distribution, and the expected preferred languages by country,” which was determined from information from the U.S. State Department and the NIS Pilot (Jasso et al., 2017).

English was labeled as Tier 0 and was expected to be the most frequently preferred language (Jasso et al., 2017). In the Pilot, over 40% of respondents preferred English despite only 20% coming from a country with English as the official or dominant language (Jasso et al., 2017). Tier 1 was Spanish, with 26% of the Pilot respondents preferring it (Jasso et al., 2017). Tier 0 and 1 were given the same treatment, each was able to be implemented through Computer-assisted personal interviewing (CAPI), and the Spanish version was fully translated (Jasso et al., 2017). The following six languages expected to be requested, Chinese, Korean, Polish, Russian, Tagalog, and Vietnamese, made up Tier 2 (Jasso et al., 2017). For Tier 2 languages, the instruments were translated but not available for CAPI (Jasso et al., 2017). Tier 3 was comprised of nine languages, Arabic, Croatian, Farsi, French, Gujarati, Hindi, Serbian, Ukrainian, and Urdu, but only a set of key concepts were translated (Jasso et al., 2017). All other languages were labeled as Tier 4 (Jasso et al., 2017). Tier 1 and 2 interviews were conducted by bilingual interviewers, or interviewer-interpreter teams if a bilingual interviewer was not available (Jasso et al., 2017). The interviewer-interpreter teams conducted the interviews for all other languages (Jasso et al., 2017).

Variables

Demographics

Demographics included sex, year of birth, years of education in total, and years of education in the United States. For sex, interviewers were instructed to code if a respondent was male or female based on their observation; if necessary, they asked the respondent. The year of birth for each respondent was an open-ended question coded as a numeric 4-digit response. For education, respondents were first asked how many years of schooling in total they had completed, followed by how many of those years in school were spent in the United States. For the total years of education, the accepted open response range was from 0 to 30; for the number of years of schooling in the United States, the range was from 0 to the value recorded for total years of education.

Migration

For migration, respondents were asked what their country of birth was, what year they left their country of birth, their age when leaving their country of birth, the country they moved to, the state they lived in on arrival, and which type of visa they had. Respondents' country of birth was recorded based on a country picklist. The picklist individually listed the top 22 most expected country response options, with the rest being grouped by continents. For the year they left their country of birth, respondents were asked: "In what year did you first leave [your country of birth] to live in another country for at least 60 days?". The accepted range was from their previously noted year of birth to the year the interview took place. Subsequently, they were asked at about what age they were when they left that country where responses could be between 0 and their current age. They were then asked which country they moved to for at least 60 days, with country picklist being used again for responses. Respondents were asked what state they moved to when they first immigrated; a separate question was asked later to determine

which state they lived in at the time of the interview. Responses were recorded based on a state picklist. Six states, California, Florida, Illinois, New Jersey, New York, and Texas were coded individually. The remaining states were placed in geographic regions, with each state being in a pre-determined category. Lastly, respondents were asked which type of visa or entry document they had, and responses were entered based on the non-immigrant temporary visa picklist. This picklist had 28 separate options, including Legal Permanent Resident, Visitor for Business, Visitor for Pleasure, Student, Temporary Worker, Fiancée, or Child of US Citizen, Parolee, Asylee, or Refugee, and others.

Language

For language use, respondents were asked if they had ever spoken any language other than English, with the response options being dichotomous as yes or no. They were asked about what languages they speak now at home, work, religious services, with their spouse and with friends as well as which language they spoke at home at the age of 10. Answers were coded based on a language picklist, with 15 individual languages listed, and four language groups (other European, other non-European, other spoken in the Philippines, other spoken in India). Respondents were also asked to self-rate their understanding of English when someone is speaking to them and then to separately rate how well they felt they spoke English. Answers for both were coded with a Likert scale of very well, well, not well, not at all. They were asked if, before coming to the United States, they took any classes where English was the language of instruction. They were then asked if they had attended any classes to learn or improve their English in the last 12 months preceding the interview. Answers for both were coded dichotomously as yes or no.

Interviewers were also asked to complete a section of the survey after they finished the interview with the respondent. They were asked to assess the respondent's English and if the interview was conducted in a language other than English and, if so, which language. Interviewers were asked how good the respondent's English was, and answers were coded with a Likert scale of very good, good, fair, poor, or not applicable if the interview was not conducted in English. They were then asked if any language other than English was used to conduct the interview with the response coded dichotomously as yes or no and used as a skip question. If they answered no, the following question was skipped, and if they answered yes, then they were asked what language was used to conduct the interview with responses being coded using the language picklist.

Media use was determined by how often respondents used various media types in English before and after they immigrated with some subsets, also asking about media in their native language as well. Respondents were randomized into five subsets, each getting one of the following media question subsets: newspapers, DVDs, going to English movies, television, or radio. Respondents assigned questions regarding reading a newspaper were asked in the year before leaving their last foreign residence to come to the United States to live, how often did they read a newspaper in both English and how often in their native language. They were also asked to report how often they read a newspaper in English and their native language now that they lived in the United States. Each response used a Likert scale of every day, a few times a week, once a week, less than once a week, never. Subsets for DVDs were asked how often they watched videos or DVDs in English both before and after they immigrated. The English movie subset was asked how often they went out to English language movies. Each response used a

Likert scale of every day, a few times a week, once a week, less than once a week, never. The television and radio subsets were asked how many hours per week, on average they watched television or listened to the radio in English, their native language, or any other language. They were asked about the last year before they left their last foreign residence to come to the United States as well as their current average. All responses were open-ended with a range from 0 to 168 hours.

Methods

Data Merging and Cleaning

The NIS Public Data was accessed through the Office of Population Research (OPR) Data Archive. The data sets for survey sections A – Demographics, J – Social, K – Migration, and R – Interviewer Remarks were used. The four survey sections were merged into one dataset using the respondents' assigned personal identification number, and only variables of interest were kept. For each variable, improbable values and responses of 'Don't know' or "Refusal" were set as missing values. Improbable values were ones that were not physically possible, such as reporting more than 168 hours of media use per week for television or radio.

Five variables were created from the variables in the provided data. The variable for the proportion of the years of school the respondent spent in the United States was made by dividing the years of school in the United States by the total number of years of education. Age was created by subtracting the respondent's year of birth from the year the interview took place. Next, the age respondents left their county of birth was made by subtracting their year of birth from the year they left their country of birth. To create the variable for the number of years in

the united states, the year respondents left their country of birth was subtracted from the year of the interview. Lastly, the variable for the proportion of the respondent's life spent in the United States was created by dividing their age by the number of years they had been in the United States.

Multiple variables were recoded based on specific analysis objectives. For variables using the country picklist, the 22 individual countries listed were recoded into the survey's existing geographic groups, "Europe & Central Asia," "East Asia, South Asia & the Pacific," "Other North America," "Latin America & the Caribbean," "Sub-Saharan Africa," "Middle East & North Africa," and "Oceania." The state picklist was also recorded so that the individual states were placed into existing state groups based on location; "New England," "Middle Atlantic," "South Atlantic," "East South Central," "East North Central," "West North Central," "West South Central," "Mountain," and "Pacific." For language, variables asking which languages respondents spoke at home, work, religious services, and with friends and spouses, all languages were recoded into either 'English' or 'Not English.' From the media use variables, the subsets for television and radio were recoded from hours per week for each language to the percentage each language accounted for out of the total time for that type of media. For example, if a respondent originally said they watched 6 hours of tv in English, 13 hours in their native language and 1 hour in another language in a week, it was recoded as 30% of television viewing was in English, 65% was in their native language, and 5% was in another language. The subsets for the frequency of newspaper and DVD use and going to English movies were recoded from a Likert scale to either 'yes' or 'no.' Responses of 'every day,' 'a few times a week,' 'once a week' and 'less than once a week' were recoded as 'yes' and 'never' was recoded as 'no.'

Statistical Analyses

All statistical analyses were conducted using SAS 9.4 (32). The survey sample consisted of 8,573 adult respondents. Respondents who had never spoken a language other than English (n=506), listed English as their primary language spoken at home at age 10 (n=741), and who moved from their country of birth to another country before moving to the United States (n=1,326) were excluded from the analysis sample. Those who did not move directly to the United States were excluded because their “experiences of acculturation are likely to be qualitatively different from those who moved directly to the U.S., by having either additional exposure to their countries of origin or having had to adapt to multiple new environments,” (Lee et al., 2013). The final analytic sample was 6,307 weighted respondents.

Descriptive statistics, tests for association, and principal component analyses were conducted using sampling weights to be nationally representative. Descriptive statistics were carried out by using Proc Univariate to determine the mean for continuous variables and Proc SurveyFreq to find frequencies for categorical variables for an overview of the sample. Descriptive statistics were conducted on all variables included in the study. Spearman’s correlations were conducted between language variables, excluding media use subsets, to measure the strength of linear relationships between paired variables.

Principal component analysis (PCA) was carried out on the language variables, excluding the media use subsets, to measure the association between variables and to reduce dimensionality. The PCA was run to determine which language variables were redundant to the study and to reduce the dimensionality of the data. For each PCA, a minimum of 0.80 was set for the alpha and the Kaiser-Meyer-Olkin (KMO) score. For both the alpha, measuring the internal consistency

among the variables, and the KMO, measuring the sampling adequacy, 0.80 is considered strong. SAS's ProcCorr was used to find the alpha for each variable grouping, and ProcFactor with the MSA and EV options was used to find the KMO and Eigenvalues. Variables were systematically removed from or placed back into the PCA based on their Spearman correlations and results of other PCA groupings.

Results

Background Characteristics

Background characteristics can be seen in Table 1. Of the 6,307 adults sampled, ages ranged from 18 to 93 years old, with an average age of 39.31 years old. Approximately 58% (weighted n=3640) were female and 42% (weighted n=2666) were male. The total number of years of education ranged from 0 to 36 years, with the range for years of school in the United States being 0-18 years. On average, the population had 11.63 years of education with less than one year (.81), or 6%, of their education taking place in the United States. Respondents were between the ages of 0 and 93 when they left their country of birth, with a mean age of 33.41. The average length of time they have lived in the United States is 5.81 years, out of a range from 0 to 65 years. The percentage of the population's lives spent in the United States is 16% on average. Nearly half of the respondents (n=2528, 48.03%) were born in Latin American or the Caribbean. Those born in East Asia, South Asia, and the Pacific accounted for 30.3% (weighted n=2026) of the sample. For visa types and entry documents, 33.52% (weighted n=2114) were Legal Permanent Resident, 16.28% (weighted n=1027) were Visitor for Business, and 4.43% (weighted n=280) were Students. Respondents reported moving to the Middle Atlantic (weighted n=1345, 21.33%) or Pacific (weighted n=2270, 36%) regions in the United States when they first immigrated.

As shown in Table 2, in the various contexts of language use, respondents were asked about, (at home, work, religious services, with friends, and with spouses) languages other than English were used more often in each category. Non-English languages were strongly favored at

home (80.42%, weighted n=5072), with spouses (70.37%, weighted n=4438), and with friends (74.55%, weighted n=4702.) Languages spoken at work were more evenly split, with 42.82% (weighted n=2701) using English and 48.10% (weighted n=3034). Approximately half (49.09%) said that they understood spoken English either 'well' (26.91%, weighted n=1697) or 'very well' (22.18%, weighted n=1399). When asked to rate their ability to speak English, nearly 60% reported speaking it 'not well' (34.19%, weighted n=2156) or 'not well at all' (24.13%, weighted n=1522). Before coming to the United States, 33.34% (n=2102) had taken a class where English was the language of instruction. In the twelve months preceding the interview, 18.35% (weighted n=1157) has attended a class to learn or improve their English.

When asked to rate the new immigrant's English ability, interviewers reported 23.95% (weighted n=1511) had 'very good' English, and 12.24% (weighted n=772) had 'good' English. Slightly more than half (52.75%) of interviews were not conducted in English. Interviewers also reported that a language other than English was used in some amount in 63.12% (weighted n=3981) of interviews. Of the interviews not conducted in English, 54.19% (weighted n=2156) were in Spanish, and 9.96% (weighted n=214) were given Chinese. Other top language choices were Vietnamese (5.59%), Russian (5.38%), and selected languages spoken in India (4.15%).

As shown in Table 3, before immigrating to the United States, new immigrants consumed more television and radio media in their native language than in English. After immigration, the inverse was reported, with more of their overall television and radio use occurring in English. Before immigration, the majority of the population had not ever read a newspaper in English (66.73%), watched DVDs in English (50.11%), or gone out to English movies (55.12%). A majority reported reading a newspaper in English (58.53%) and watching DVDs in English (71.97%) after

immigration; however, 51% still had not gone out to an English language movie. Graph 4 shows that the use of English language media increased after immigration to the United States across all media types. Additionally, while the number who read a newspaper in their native language decreased, 63.06% of respondents still read newspapers in their native language post-immigration.

Contexts of Language Use

The comparison of language contexts and self-rated understanding of English can be seen in Table 4. Among those who spoke English in any context (at home, work, religious services, with friends, and with spouses), how well they understood English was most often self-reported as 'very well.' 'Well' was the next most common response, followed by "not well' and 'not at all.' For those who spoke a language other than English, the most common self-response of English understanding was 'not well' across all contexts. The second most common self-rating was 'well' for those not speaking English at home, with friends, spouses, or at religious services. In the context of work, the second most common self-rating was 'not at all.' This shows that those who know English are more likely to use it with others.

As seen in Table 5, those who speak English, across all language contexts, had a higher consumption of English language television, both before and after immigration. The same is true for the amount of English radio they listened to before and after immigration. Those who spoke English also showed larger increases in their proportions of English media use. The average increase for those who spoke English was .40 for television and .47 for radio. In comparison, those who did not speak English only increased, on average, by .34 for television and .30 for radio.

Table 6 shows the comparison of regions of origin across language contexts. Across all regions, there was a preference to speak a language other than English at home. In the context of work, most regions spoke English except for those from Latin America and the Caribbean, who had twice as many non-English speakers (weighted $n=1833$) than English speakers (weighted $n=984$). In the context of speaking with friends, most regions reported more non-English speakers than English speakers. However, those from Sub-Saharan Africa were almost evenly split between English (weighted $n=151$) and not English (weighted $n=152$). Like the contexts “at home” and “with friends”, the “with spouse” context had more speakers use a non-English language than English across all regions of birth. Most regions reported attending religious services in a language other than English, with the exception of Sub-Saharan Africa.

The comparison of contexts where language is used, and measurements of age and time lived in the United States can be seen in Table 7. Across all contexts, those who used English were younger than those who used a language other than English. On average, they were 6.72 years younger. The average age for leaving their country of birth was younger for those who used English than those who did not. The age at which they left their country of birth was an average of 7.17 years younger for those who used English. Among these, there was a slightly older average age (32.44, weighted $n=997$) for those who used English, than those who did not (32.28, weighted $n=2368$) at religious services. Table 9 also shows that those who use English have lived in the United States longer on average, except in the context of religious services. On average, those who used English had been in the United States 6.45 years, and those who used another language, 5.88 years.

As seen in Table 8, those who used English had more years of education. The average years of education across contexts was 14.47 for those who used English and 10.61 for those who did not. The years of education in the United States were also higher in those who used English. For all contexts, the average number of years of education spent in the United States was 1.68 for those who used English and .50 for those who used another language.

Self-Ratings of English Proficiency

Graph 1 shows self-reported English-speaking skills by region of origin. Sub-Saharan Africa had the highest self-reported English-speaking abilities. Over 70% of those born in that region said they either spoke English 'well' (36.44%) or 'very well' (42.08%). In all other regions, the population felt they spoke English 'not well' more than any other level. Those born in Europe or Central Asia had a more even distribution among those who had any level of English-speaking skills above 'not at all' with 'very well,' 'well,' and 'not well,' each having roughly 30%. Those from Latin America and the Caribbean had both the lowest level of respondents for 'very well' (16.83%) and the highest level for 'not at all' (24.53%) across all regions.

In Graph 2, looking at the average self-reported understanding of spoken English over time, there is no correlation between the number of years spent in the United States and self-reports after the fourth year spent living in the United States. Those who had been living in the United States less than a year (year zero) had the lowest average score at 2.08. The average score increased from 2.08 in year zero to 3.03 in year four. From years four through seven, the score remained relatively close to 3.00. From year eight onward, the average score remained in the

range of 2.64 to 2.84, except for year 12's average of 3.00. Throughout the time examined, the highest average score was 3.03 and was reached twice in years four and seven.

Graph 3 shows the interviewer's perceptions of respondents' English comprehension compared to respondents' self-assessment of their comprehension. For three of the interviewer categories, 'very good,' 'good,' and 'fair,' most respondents reported the corresponding self-rating score ('very well,' 'well,' 'not well'). Over half (54.11%) of respondents categorized as having a 'very good' understanding of English by the interviewer said they understood English 'very well.' Those considered by the interviewer to have a 'good' understanding of English tended to report understanding English 'well' (64.46%). 52.79% of respondents rated as 'fair' by the interviewer also rated themselves correspondingly as 'fair.' In the response category 'poor,' nearly three quarters (72.75%) of respondents rated themselves as 'not well,' a category above the interviewer's. Out of those who did not complete the interview in English, 15.77% still rated how well they understood English as either 'very well' or 'well.'

Table 9 shows the comparison of English understanding and English language media use. Those with the highest self-rating of English, 'very well,' had the highest consumption of English language media both before and after immigration. On average, 42% (weighted n=261) of their television viewing was in English before they immigrated and 81% (weighted n=275) after. For radio, their average was 38% (weighted n=219) before and 80% (weighted n=239) after immigration. Each successive self-rating level, 'well,' 'not well,' and 'not at all,' had lower averages of English media use. Those who understood English 'not at all' only had a 10% (weighted n=160) average of their television use and a 5% (weighted n=149) average of their

radio use be in English before immigration. After immigration, their averages only rose to 32% (weighted n=164) for television and 17% (weighted n=133).

These after immigration averages are lower than the before immigration averages for those who understood English 'well' or 'very well.'

In Graph 5, by region of birth, those from Sub-Saharan Africa consumed the most English television and radio both before and after immigration. Those from Latin America and the Caribbean consumed the least overall both before and after immigration. However, those from Latin America and the Caribbean had the largest percentage increase (194%) in English television viewing. The largest percentage increase (234%) in English radio was in those from the Middle East and North Africa. Respondents from East Asia, South Asia, and the Pacific only increased their English radio use by 91%. The smallest percentage increase in English television was in those from Sub-Saharan Africa, with a 41% increase.

Comparison of Indicators of Language Use

The Spearman correlations of language use, Table 10, show that of the 12 language variables compared using Spearman correlations, the strongest correlation was between 'How well do you understand spoken English' and 'How well do you speak English' (.91). The weakest correlations, below $|0.10|$, were only found in two variables, 'Any English classes in the last twelve months' and 'Interview language (non-English).' For any English classes in the last twelve months' correlations ranged from -0.02 to 0.16, with eight comparisons falling below $|0.10|$. Correlations with 'Interview language (non-English)' were from -0.02 to 0.08. The weakest

correlation, |0.02|, occurred four times, all with 'Interview language (non-English)' and other variables.

Tables 11 and 12 show the principal component analyses. From the 12 language variables, two principal component analyses (PCA) were constructed. For both, the variable 'Was any other language used to conduct the interview,' a skip question, prevented the analysis from running and was removed. In the first PCA, Table 4, only 'Interview language (non-English)' was removed and resulted in an Eigenvalue of 3.542, an alpha of 0.83, and a Kaiser-Meyer-Olkin (KMO) score of 0.80. The first Eigenvalue of 3.542 explains 32.2% of the variation in the data. The KMO, a measure of sampling adequacy, indicated the 'meritorious' adequacy of the correlations. For the second PCA, Table 5, an Eigenvalue of 3.547, an alpha of 0.81, and a KMO of 0.83 were achieved. The seven remaining variables were: 'Languages Spoken at Home,' 'Languages Spoken at Work,' 'Languages Spoken with Friends,' 'Languages Spoken with Spouse,' 'Languages Spoken at Religious Services,' 'Interviewers Perception of Respondent's English,' 'Was any Other Language Used to Conduct Interview.' The first Eigenvalue of 3.547 explains 32.2% of the variation in the data. The second PCA had a greater reduction in variables and left the variables that measured language choice in different contexts, and immigrants' English proficiency.

Discussion

Today, the United States is home to 19% of the world's immigrant population and has the largest number of international immigrants (United Nations Population Division, 2019b). The sheer growth in migration and the diversity in migrants' origins, socioeconomic status, and motivations have resulted in receiving communities becoming more diverse, socially, culturally, religiously, and ethnically (International Organization for Migration, 2019). Becoming part of a new community or society is an integral and complex part of the migration phenomenon (International Organization for Migration, 2019). The interaction of cultures and the resulting changes are collectively known as acculturation (Sam & Berry, 2006). Language use and proficiency can be a critical barrier in acculturation; it can determine access to health care, housing, education, employment, and other resources (International Organization for Migration, 2019). Measures of English proficiency and language use are indicators of social mobility and can predict acculturation better than other measures (Chrisman et al., 2017; Kang, 2006).

The purpose of this study was to assess language use and proficiency among immigrants to the United States and to examine the associations between measures of language. The contexts in which languages are spoken were examined to determine if immigrants spoke English or a non-English language in daily aspects of their lives. English proficiency was determined by examining immigrant's self-assessments of their English understanding and their English-speaking ability as well as the interviewer's perception of their English comprehension. Measures of language were compared to determine association.

Results showed that while those who are proficient in English are more likely to use it in the language use contexts of home, work, religious services, with friends, and with spouses, there is a distinct difference between the percentage of immigrants who use English in public contexts (at work and religious services) and in private contexts (at home, with friends or with spouses). Those who reported using English in the various language use contexts, rather than a non-English language, on average, were younger, had spent more time living and studying in the United States. When conducting the survey, interviewers were asked to rate the respondent's understanding of English, and there was an overall agreement between the interviewer's perceptions of the respondent's English comprehension and the respondent's self-rating.

Major Findings

Contexts of Language Use

In the contexts of language use examined by the New Immigrant Survey (NIS), at home, at work, at religious services, with friends, and with spouses, languages other than English were used more often than English in each context. The more personal contexts, such as at home, with friends, and with spouses, immigrants strongly favored non-English languages. In contexts occurring in more public spheres of life, at work and religious services, immigrants were still less likely to use English but were more evenly split between English and a non-English language. The differences between public and personal contexts were consistent with a study by Akresh, which used the NIS to examine language use in these contexts and the probability of English use in each context (Akresh, 2007). Akresh found that the probability of immigrants speaking English in personal contexts was lower than in public contexts and suggested that English use is not

'contextually compartmentalized' and contexts overlap and influence each other. The differences between public and private contexts could also be due to public contexts being more heterogeneous and requiring English as the common language for communication.

In comparing the use of English in the various contexts of language use to English media use, those who primarily spoke English had higher levels of English television and radio consumption both before and after immigration. Those who used English, in any of the contexts, also had larger increases in their proportions of English media use after immigration. According to previous research, as immigrants acculturate and adopt traits from their new host society, their use of host media increases as native media use decreases (Dalisy, 2012). This shows that those who consumed more English media before immigration had higher levels of English and potentially lower acculturative stress.

Across the different contexts of language use, those who reported using English, rather than a non-English language, were, on average, younger, had left their country of birth at a younger age, and had lived in the United States for longer than those who used a language other than English. While research is divided on the influence of age in second language acquisition, its role in foreign language anxiety is widely accepted. Studies show that older individuals are more reluctant to communicate in new languages when they are likely to make mistakes and feel that the "target language should not be attempted unless accuracy is maintained" (Onwuegbuzie et al., 1999). This internalized fear can lead to older speakers preferring to use their native language, while younger speakers are less self-conscious and willing to use English in more contexts. In another study, Akresh found that age at arrival is a key determinate of English use in each

language use context (Akresh, 2007). Immigrants who arrive at younger ages, and have spent more time living in the United States, are more likely to use English.

The relationship between years of education and language contexts showed that in each context, those who used English had a higher average of years of education and a higher average of years of education in the United States than those who did not use English. Higher levels of education among those who used English is supported by the idea of instrumental motivation, where practical goals such as education drive language acquisition (Lightbown & Spada, 2013). Those who spend more time in structured environments, like classrooms, are more likely to have requirements and resources to learn a new language. Additionally, those who completed part of their education in the United States would most likely be obligated to use English on a daily basis, increasing exposure and use in an environment that places a high value on English proficiency. In turn, having a foundation in a second language can lower apprehension about communication and increase usage across contexts (MacIntyre & Charos, 1996).

Self-Ratings of English Proficiency

There was neither a positive nor negative correlation between the average self-rating of English understanding and the length of time lived in the United States. A slight positive association was found until the fifth year of living in the United States, after which the average remained largely steady. This finding does not correspond with the existing literature. Espinosa and Massey found that there was a positive relationship between English proficiency and time spent in the United States (Espinosa & Massey, 1997). One possible explanation for this thesis's finding could be language fossilization. After several years language acquisition can plateau before an individual reaches native-like proficiency (Tarone, 2012). Without direct instruction,

individuals may make progress in some areas but lack large gains in second language acquisition. This finding could also be impacted by the lack of long-time dwellers among the respondents; over 60% of this study's sample had lived in the United States for less than five years.

When the interviewer's perceptions of respondents' English comprehension were compared to self-perception, there was an overall agreement between the interviewer and the respondent about the respondent's level of English understanding. The literature demonstrated that self-ratings and external assessments showed agreement overall (Blanche & Merino, 1989; Ross, 1998). However, of those who chose to have their interview in a language other than English, 15.77% said they understood English either well or very well. This contradiction could be the result of positive self-bias rather than an individual inability to assess language skills (MacIntyre et al., 1997). This bias stems from the need to find personal satisfaction and self-worth and leads to individuals viewing their skills in a positive but unrealistic light. Respondents might have felt the need to represent their English skills positively to the interviewer rather than report a lower self-rating. Alternatively, respondents might have accurately gauged their English abilities but felt more comfortable conducting the interview in their native language, particularly if the interviewer spoke their native language and did not need to rely on a translator.

Comparing the choice to use English across language-use contexts with self-ratings of English understanding showed that those used English had stronger self-rated English skills. For those who used a non-English language, self-ratings of English understanding still tended to indicate a moderate level of English understanding. This finding is supported by the Akresh study, which states that 'language use among multilingual individuals is driven by social interactions and which language is used will depend on various factors, including one's own ability,' (Akresh, 2007).

Those with a higher perception of their English skills will use English in more contexts, contributing to the validation of their perception.

Comparison of Indicators of Language Use

The strongest correlation among the language variables was between speaking and understanding English. This shows that the various measures of language proficiency are closely tied, but each skill has its own set of measurement criteria and cannot be treated as one measure. A metaanalysis by Ross suggested that speaking skills are the most susceptible to external factors and are often measured by the disparity between the respondent's communicative intentions and their actual delivery (Ross, 1998). There was also a strong positive correlation between the interviewer's perception of the respondent's English and speaking and understanding English. A study by Hamilton et al. found that there were few differences between interviewer assessments and respondent's self-assessments of English proficiency, and using interviewer assessments could help reduce bias that is sometimes found with self-assessments (Hamilton et al., 2008).

The weakest correlations were with the variable asking which non-English language the interview was conducted in. Which non-English language the interview was conducted in was equally least correlated with which language was spoken at work, which language was spoken at religious services, if the respondent has taken any classes in English before coming to the United States, and if they had taken any English classes in the 12 months before the interview. The use of a non-English language for the interview has no impact on which languages are used in various language contexts, how well and individual speaks or understands English, or if they have attended English classes. The interview language variable should not be used as a measure of wider language use and comprehension.

The principal component analyses served to eliminate redundant language variables and reduce the dimensionality of the data and show which variables were the most effective measures of language. The first principal component analysis only removed one variable, 'interview language,' out of the original 12. The second principal component analysis kept seven of the variables. The variables that were kept were all of the language use contexts variables, the interviewer's perception of the respondent's English, and if the interview was conducted in English or not. Despite the large differences in the number of remaining components, both analyses had Eigenvalues of 3.5 with alphas and Kaiser-Meyer-Olkin score just above 0.80. Given the similarity between the output values of the two analyses, the second component analysis could be used to capture the same dimensions as the first but with fewer variables. The remaining variables from the second analysis focus on variables that measure where immigrants are using English and their English proficiency.

Strengths and Limitations

Limitations

The New Immigrant Survey (NIS) is a longitudinal study that had two rounds of interviews. One limitation is that this thesis used only the first round of interviews for a cross-sectional examination of the data. Using the second-round data would have enabled a longitudinal comparison of individual changes in language and media use over time. Another limitation was that the NIS sample only consisted of immigrants who were granted legal permanent residency from May to November 2003. This sampling design reduced the number of immigrants who have

resided in the United States for longer periods, which may limit the generalizability of the findings.

Strengths

A strength of this thesis is the use of the NIS, a nationally representative, validated, reliable dataset that allowed the examination of relationships between language use and acculturation. Secondly, the NIS had a level of detail for language measures not found elsewhere. There were multiple measures for language use, understanding, acquisition, and media use that enabled a richer description of the facets of language and acculturation. Respondents were also asked about their media consumption in English, their native language, and other languages, as well as comparing their media use from before immigration to now. Finally, the NIS conducted interviews in the respondent's preferred language, which maximized response rates and data quality.

Public Health Implications and Recommendations

While acculturation is a highly complex process and cultural identities are dynamic, language use and proficiency can be used in its measurement. This study examined the contexts of language use, influences on English proficiency, and how language measurements relate to one another. Understanding the ways in which language is gained, used, and measured can lead to a stronger understanding of acculturation, which is crucial in reducing barriers faced by immigrants to the United States.

The comparison of language variables showed that interviewer perceptions of respondent's English had a robust correlation with self-reports of speaking and understanding. Future research

should take into account this association and use a similar external measure to either replace or validate self-assessments of language skills. This is also supported by the second principal component analysis, which reduced the dimensionality of having multiple self-assessments in favor of the external interviewer perception measure.

With regards to English language proficiency, this study revealed that while those who are proficient in English are more likely to use it in various language speaking contexts, there was little to no relationship between time spent living in the United States and increased proficiency. Further analysis is needed to more closely examine the changes in English language skills over time. Use of the NIS's second wave of data would reveal shifts in proficiency among respondents. While there might not be much difference for those who have lived in the United States for longer, the four to five years between the initial interview and follow up would be at least twice the amount of time spent living in the United States for the new arrivals who make up a majority of the respondents.

This study also examined the difference between language use contexts. It highlights the separation between public and private contexts and the influence of outside factors, particularly on public contexts. It also demonstrates that language use is blended, and immigrants do not completely switch from using their native language to using English in all contexts. Given the differences and complexities between public and private contexts, further research is needed to establish the influence of community on language use. Immigrants who live in ethnically concentrated enclaves may have lower levels of acculturation than those living in more integrated or diverse neighborhoods.

References

- Akresh, I. R. (2007). Contexts of English Language Use among Immigrants to the United States <sup/>. *International Migration Review*, 41(4), 930–955. <https://doi.org/10.1111/j.1747-7379.2007.00106.x>
- Anguiano, R. M. (2018). Language Brokering among Latino Immigrant Families: Moderating Variables and Youth Outcomes. *Journal of Youth and Adolescence*, 47(1), 222–242. <https://doi.org/10.1007/s10964-017-0744-y>
- Arends-Tóth, J., & van de Vijver, F. J. R. (2004). Domains and dimensions in acculturation: Implicit theories of Turkish–Dutch. *International Journal of Intercultural Relations*, 28(1), 19–35. <https://doi.org/10.1016/j.ijintrel.2003.09.001>
- Bardovi-Harlig, K., & Stringer, D. (2010). VARIABLES IN SECOND LANGUAGE ATTRITION: Advancing the State of the Art. *Studies in Second Language Acquisition*, 32(1), 1–45. <https://doi.org/10.1017/S0272263109990246>
- Berry, J. W. (2006). Acculturative Stress. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of Multicultural Perspectives on Stress and Coping* (pp. 287–298). Springer US. https://doi.org/10.1007/0-387-26238-5_12
- Birdsong, D. (1999). Introduction: Whys and Why Nots of the Critical Period Hypothesis for Second Language Acquisition. In *Second language acquisition and the critical period hypothesis*. Erlbaum.
- Blanche, P., & Merino, B. J. (1989). Self-Assessment of Foreign-Language Skills: Implications for Teachers and Researchers. *Language Learning*, 39(3), 313–338. <https://doi.org/10.1111/j.1467-1770.1989.tb00595.x>

- Celenk, O., & Van de Vijver, F. J. R. (2011). Assessment of Acculturation: Issues and Overview of Measures. *Online Readings in Psychology and Culture, 8*(1).
<https://doi.org/10.9707/2307-0919.1105>
- Chrisman, M., Chow, W.-H., Daniel, C. R., Wu, X., & Zhao, H. (2017). Associations between language acculturation, age of immigration, and obesity in the Mexican American Mano A Mano cohort. *Obesity Research & Clinical Practice, 11*(5), 544–557.
<https://doi.org/10.1016/j.orcp.2017.03.005>
- Collier, C. (2017). Assessment of Acculturation. In *Handbook of multicultural school psychology: An interdisciplinary perspective* (Second edition). Routledge, Taylor & Francis Group.
- Dalisay, F. (2012). Media Use and Acculturation of New Immigrants in the United States. *Communication Research Reports, 29*(2), 148–160.
<https://doi.org/10.1080/08824096.2012.667774>
- Dörnyei, Z. (2003). Attitudes, Orientations, and Motivations in Language Learning: Advances in Theory, Research, and Applications: Attitudes, Orientations, and Motivations. *Language Learning, 53*(S1), 3–32. <https://doi.org/10.1111/1467-9922.53222>
- Espinosa, K. E., & Massey, D. S. (1997). Determinants of English proficiency among Mexican migrants to the United States. *The International Migration Review, 31*(1), 28–50.
- Furnham, A., & Bochner, S. (1986). *Culture shock: Psychological reactions to unfamiliar environments*. Methuen.
- Gardner, R. C., Tremblay, P. F., & Masgoret, A.-M. (1997). Towards a Full Model of Second Language Learning: An Empirical Investigation. *The Modern Language Journal, 81*(3), 344–362. <https://doi.org/10.1111/j.1540-4781.1997.tb05495.x>

- Hamilton, D., Goldsmith, A. H., & Darity, W. (2008). Measuring the Wage Costs of Limited English: Issues With Using Interviewer Versus Self-Reports in Determining Latino Wages. *Hispanic Journal of Behavioral Sciences*, 30(3), 257–279.
<https://doi.org/10.1177/0739986308320470>
- Han, Z., & Selinker, L. (2005). Fossilization in L2 Learners. In *Handbook of Research in Second Language Teaching and Learning* (pp. 455–470).
- Hannum, E., & Cherng, H.-Y. (2014). Linguistic Capital, Information Access and Economic Opportunity among Rural Young Adults in Western China*. In *Asia-Pacific Education, Language Minorities and Migration (ELMM) Network Working Paper Series*.
https://works.bepress.com/emily_hannum/36/
- International Organization for Migration. (2019). *World Migration Report 2020* (pp. 189–211). International Organization for Migration.
https://www.un.org/sites/un2.un.org/files/wmr_2020.pdf
- Jasso, G., Massey, D. S., Rosenzweig, M. R., & Smith, J. P. (2017). The U.S. New Immigrant Survey: Overview and Preliminary Results Based on the New-Immigrant Cohorts of 1996 and 2003. In *Immigration Research and Statistics Service Workshop on Longitudinal Surveys and Cross-Cultural Survey Design* (pp. 29–46). Crown Publishing.
https://nis.princeton.edu/downloads/nis_2003/JMRS-IRSS-NIS-Overview-2005.pdf
- Kang, S.-M. (2006). Measurement of Acculturation, Scale Formats, and Language Competence: Their Implications for Adjustment. *Journal of Cross-Cultural Psychology*, 37(6), 669–693.
<https://doi.org/10.1177/0022022106292077>

- Köpke, B. (2004). Neurolinguistic aspects of attrition. *Journal of Neurolinguistics*, *17*(1), 3–30.
[https://doi.org/10.1016/S0911-6044\(03\)00051-4](https://doi.org/10.1016/S0911-6044(03)00051-4)
- Lee, S., O’Neill, A. H., Ihara, E. S., & Chae, D. H. (2013). Change in self-reported health status among immigrants in the United States: Associations with measures of acculturation. *PloS One*, *8*(10), e76494. <https://doi.org/10.1371/journal.pone.0076494>
- Lightbown, P., & Spada, N. M. (2013). *How languages are learned* (Fourth edition). Oxford University Press.
- Long, M. H. (2007). *Problems in SLA*. L. Erlbaum Associates.
- MacIntyre, P. D., & Charos, C. (1996). Personality, Attitudes, and Affect as Predictors of Second Language Communication. *Journal of Language and Social Psychology*, *15*(1), 3–26.
<https://doi.org/10.1177/0261927X960151001>
- MacIntyre, P. D., & Gardner, R. C. (1994). The Subtle Effects of Language Anxiety on Cognitive Processing in the Second Language. *Language Learning*, *44*(2), 283–305.
<https://doi.org/10.1111/j.1467-1770.1994.tb01103.x>
- MacIntyre, P. D., Noels, K. A., & Clément, R. (1997). Biases in Self-Ratings of Second Language Proficiency: The Role of Language Anxiety. *Language Learning*, *47*(2), 265–287.
<https://doi.org/10.1111/0023-8333.81997008>
- Martinez, C. R., McClure, H. H., & Eddy, J. M. (2009). Language Brokering Contexts and Behavioral and Emotional Adjustment Among Latino Parents and Adolescents. *The Journal of Early Adolescence*, *29*(1), 71–98. <https://doi.org/10.1177/0272431608324477>

- Massey, D. S., Jasso, G., & Espinoza, M. (2017). *Weighting for Nonresponse on Round Two of the New Immigrant Survey*. https://nis.princeton.edu/downloads/nis_2003_2/NIS-2003-2-Nonresponse-Weights-R2.pdf
- Morales, A., & Hanson, W. E. (2005). Language Brokering: An Integrative Review of the Literature. *Hispanic Journal of Behavioral Sciences*, 27(4), 471–503.
<https://doi.org/10.1177/0739986305281333>
- Muysken, P., & Smith, N. (1994). 1. The study of pidgin and creole languages. In J. Arends, P. Muysken, & N. Smith (Eds.), *Creole Language Library* (Vol. 15, pp. 3–14). John Benjamins Publishing Company. <https://doi.org/10.1075/cll.15.05muy>
- New Immigrant Survey. (n.d.). *NIS-2003 Sampling Weights*.
https://nis.princeton.edu/downloads/nis_2003/NIS-2003-Sampling-Weights.pdf
- Onwuegbuzie, A. J., Bailey, P., & Daley, C. E. (1999). Factors associated with foreign language anxiety. *Applied Psycholinguistics*, 20(2), 217–239.
<https://doi.org/10.1017/S0142716499002039>
- Portes, A., & Rumbaut, R. G. (2006). *Immigrant America: A portrait* (3rd ed., rev.expanded, and updated). University of California Press.
- Redfield, R., Linton, R., & Herskovits, M. J. (1936). Memorandum for the Study of Acculturation. *American Anthropologist*, 38(1), 149–152.
<https://doi.org/10.1525/aa.1936.38.1.02a00330>
- Ross, S. (1998). Self-assessment in second language testing: A meta-analysis and analysis of experiential factors. *Language Testing*, 15(1), 1–20.
<https://doi.org/10.1177/026553229801500101>

- Salant, T., & Lauderdale, D. S. (2003). Measuring culture: A critical review of acculturation and health in Asian immigrant populations. *Social Science & Medicine (1982)*, *57*(1), 71–90. [https://doi.org/10.1016/s0277-9536\(02\)00300-3](https://doi.org/10.1016/s0277-9536(02)00300-3)
- Sam, D. L., & Berry, J. W. (2006). *The Cambridge handbook of acculturation psychology*. Cambridge University Press. <http://site.ebrary.com/id/10137547>
- Schwartz, S. J., Unger, J. B., Zamboanga, B. L., & Szapocznik, J. (2010). Rethinking the concept of acculturation: Implications for theory and research. *The American Psychologist*, *65*(4), 237–251. <https://doi.org/10.1037/a0019330>
- Smits, J., & Gündüz-Hoşgör, A. (2003). Linguistic capital: Language as a socio-economic resource among Kurdish and Arabic women in Turkey. *Ethnic and Racial Studies*, *26*(5), 829–853. <https://doi.org/10.1080/0141987032000109050>
- Szapocznik, J., Kurtines, W. M., & Fernandez, T. (1980). Bicultural involvement and adjustment in Hispanic-American youths. *International Journal of Intercultural Relations*, *4*(3–4), 353–365. [https://doi.org/10.1016/0147-1767\(80\)90010-3](https://doi.org/10.1016/0147-1767(80)90010-3)
- Tarone, E. (Ed.). (2012). Interlanguage. In *The Encyclopedia of Applied Linguistics* (1st ed.). Wiley. <https://doi.org/10.1002/9781405198431>
- Tieu, Y., & Konnert, C. (2015). Measuring acculturation and enculturation among Chinese Canadian older adults. *Canadian Journal on Aging = La Revue Canadienne Du Vieillessement*, *34*(1), 36–46. <https://doi.org/10.1017/S071498081400049X>
- Titzmann, P. F., & Fuligni, A. J. (2015). Immigrants' adaptation to different cultural settings: A contextual perspective on acculturation: Introduction for the special section on

- immigration. *International Journal of Psychology: Journal International De Psychologie*, 50(6), 407–412. <https://doi.org/10.1002/ijop.12219>
- Tse, L. (1996). Language brokering in linguistic minority communities: The case of Chinese- and Vietnamese-American students. *Bilingual Research Journal; Philadelphia*, 20(3/4), 485–498.
- Tse, L. (2001). Resisting and reversing language shift: Heritage-language resilience among U.S. native biliterates. *Harvard Educational Review; Cambridge*, 71(4), 676–708.
- United Nations Population Division. (2019a). *International Migration Stock 2019: Ten Key Messages* (p. 2). United Nations Department of Economic and Social Affairs. https://www.un.org/en/development/desa/population/migration/publications/migrationreport/docs/MigrationStock2019_TenKeyFindings.pdf
- United Nations Population Division. (2019b). *Migration Stock 2019: Population Facts* (2019/4; p. 4). United Nations Department of Economic and Social Affairs. https://www.un.org/en/development/desa/population/migration/publications/populationfacts/docs/MigrationStock2019_PopFacts_2019-04.pdf
- United States Census Bureau. (2018). *Metropolitan and Micropolitan* [Government]. <https://www.census.gov/programs-surveys/metro-micro/about.html>
- United States. Department of Homeland Security. (2017). *2017 Yearbook of Immigration Statistics* (p. 123). Office of Immigration Statistics. https://www.dhs.gov/sites/default/files/publications/yearbook_immigration_statistics_2017_0.pdf

- VanPatten, B., & Williams, J. (Eds.). (2015). *Theories in second language acquisition: An introduction* (Second Edition). Routledge.
- Vries, J. de. (1999). 12. Foreign Born Language Acquisition and Shift. In L. Driedger & S. Halli (Eds.), *Immigrant Canada* (pp. 261–281). University of Toronto Press.
<https://doi.org/10.3138/9781442676022-014>
- Wei, J. (2014). Selectivity of Second Language Attrition. *Theory and Practice in Language Studies*, 4(8), 1603–1608. <https://doi.org/10.4304/tpls.4.8.1603-1608>
- Zafar, S., & Meenakshi, K. (2012). A study on the relationship between extroversion-introversion and risk-taking in the context of second language acquisition. *International Journal of Research Studies in Language Learning*, 1(1).
<https://doi.org/10.5861/ijrsl.2012.v1i1.42>
- Zheng, Y. (2010). On Some New Models of Instruction for Overcoming Fossilization in English Learning. *Journal of Language Teaching and Research; London*, 1(2).
- Zong, J., Batalova, J., & Burrows, M. (2019, March 14). *Frequently Requested Statistics on Immigrants and Immigration in the United States*. Migration Policy Institute.
<https://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states>

Tables and Graphs

Table 1: Weighted Distribution of Background Characteristics of Immigrants to the US

Variables	n (missing)	Mean or Percentage	Standard Error
Age	6281 (26)	39.31	0.1799
Gender			
Male	2666	42.28%	0.7184
Female	3640	57.72%	0.7184
Missing	0	0.00%	--
Years of Education	6289 (18)	11.63	0.0639
Years of School in the US	6091 (216)	0.81	0.2899
Proportion of Years of Education Spent in the US	6075 (232)	0.06	0.0022
Age Left County of Birth	6124 (183)	33.41	0.1993
Length of Time in the US (Years)	6145 (162)	5.81	0.0922
Proportion of Life Spent in the US	6124 (183)	0.16	0.0024
Region Born			
Europe & Central Asia	933	12.19%	0.4605
East Asia, South Asia & the Pacific	2026	30.30%	0.663
Other North America	28	5.00%	0.1145
Latin America & the Caribbean	2528	48.03%	0.735
Africa Sub-Saharan	437	4.93%	0.292
Middle East & North Africa	256	3.61%	0.2733
Missing	25	0.43%	0.099
Visa Type			
Legal Permanent Resident	2114	33.52%	0.6698
Visitor for Business	1027	16.28%	0.5698
Visitor for Pleasure	168	2.66%	0.2534
Student	280	4.43%	0.3135
Temporary Worker	154	2.43%	0.1888
Exchange Visitor	48	0.77%	0.1272
Fiancée or Child of US Citizen	163	2.58%	0.2915
Intracompany Transferee	22	0.35%	0.0771
Religious Worker	7	0.12%	0.0306
Parolee, Asylee, or Refugee	129	2.04%	0.1898
Border Crossing Card	59	0.94%	0.1535
No Documents (Entered Without Inspection)	15	0.23%	0.0665
Other	405	6.42%	0.3652
Missing	1717	27.23%	0.6591
Area Moved to in the US			
New England (CT,MA,ME,NH,RI,VT)	310	4.92%	0.3074
Middle Atlantic (DE,DC,MD,PA,NJ,NY)	1345	21.33%	0.5786

South Atlantic (GA,NC,SC,VA,WV,FL)	731	11.58%	0.478
East South Central (AL,KY,TN,MS)	59	0.94%	0.1505
East North Central (IN,MI,OH,WI,IL)	534	8.48%	0.402
West North Central (IA,MN,MO,ND,SD,NE,KS)	144	2.28%	0.2362
West South Central (LA, OK, AR, TX)	598	9.48%	0.4397
Mountain (AZ, CO, ID, NM, NV,UT,WY,MT)	292	4.63%	0.3366
Pacific (AK, HI, OR, WA, CA, FM, AP)	2270	36.00%	0.7054
Missing	22	0.35%	0.095

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding.

Table 2: Weighted Distribution of Language Use in Immigrants to the US

Variable	n	Percentage	Standard Error
Languages Spoken at Home			
English	1012	16.04%	0.5871
Not English	5072	80.42%	0.6183
Missing	223	3.54%	0.2543
Languages Spoken at Work			
English	2701	42.82%	0.7279
Not English	3034	48.10%	0.7327
Missing	572	9.08%	0.4125
Languages Spoken with Friends			
English	1370	21.72%	0.6187
Not English	4702	74.55%	0.6465
Missing	235	3.73%	0.2605
Languages Spoken with Spouse			
English	699	11.08%	0.5405
Not English	4438	70.37%	0.6716
Missing	1170	18.55%	0.5139
Languages Spoken at Religious Services			
English	952	15.09%	0.5304
Not English	2536	40.21%	0.7181
Missing	2819	44.70%	0.7295
How Well Do You Understand Spoken English			
Very Well	1399	22.18%	0.6202
Well	1697	26.91%	0.6571
Not well	1936	30.70%	0.6773
Not at all	1265	20.05%	0.5645
Missing	10	0.15%	0.0595
How Well Do You Speak English			
Very Well	1041	16.50%	0.5509
Well	1578	25.01%	0.6421
Not well	2156	34.19%	0.6979
Not at all	1522	24.13%	0.6126
Missing	11	0.17%	0.0586
Any English Classes Before the US			
Yes	2102	33.34%	0.7034
No	3977	63.07%	0.7155
Missing	227	3.60%	0.2579
Any English Classes in the Last Twelve Months			
Yes	1157	18.35%	0.5833
No	4924	78.08%	0.6158
Missing	225	3.57%	0.2568

Interviewers Perception of Respondent's English			
Very Good	1511	23.95%	0.6331
Good	772	12.24%	0.4827
Fair	429	6.80%	0.3702
Poor	259	4.11%	0.2914
N/A (Interview not Conducted in English)	3327	52.75%	0.7332
Missing	10	0.15%	0.0493
Was any Other Language Used to Conduct Interview			
Yes	3981	63.12%	0.7114
No	2321	36.80%	0.7111
Missing	5	0.08%	0.0381
Interview Language (Top 5 Non-English Languages)			
Spanish	2156	54.19%	0.9076
Chinese*	214	9.96%	0.528
Vietnamese	396	5.59%	0.4367
Russian	222	5.38%	0.3733
Selected Languages Spoken in India	165	4.15%	0.3569

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding.

*Includes: Chinese (Mandarin), Cantonese (Yu/Yue), Yueh, Fukien (Fukienese), Wu (Shanghaiese), Taiwanese.

Table 3: Weighted Randomized Samples of Media Use ^

Variables	n	Mean or Percentage	Standard Error
Average Percentage of time watching TV before	1016		
English		0.28	0.0109
Native		0.69	0.0113
Other		0.03	0.0039
Percentage of time watching TV now	1101		
English		0.64	0.0103
Native		0.35	0.0103
Other		0.01	0.0023
Percentage of time radio before	877		
English		0.24	0.0114
Native		0.73	0.0117
Other		0.02	0.0033
Percentage of time radio now	867		
English		0.59	0.0135
Native		0.39	0.0134
Other		0.02	0.0034
Before US Read A Newspaper In English	1214		
Yes	404	33.27%	1.5817
No	810	66.73%	1.5817
Now Ever Read A Newspaper In English	1212		
Yes	709	58.53%	1.6555
No	503	41.47%	1.6555
Before US Read Newspaper In Native Lang	1213		
Yes	941	77.61%	1.402
No	272	22.39%	1.402
Now ever Read A Newspaper In Native Lang	1210		
Yes	763	63.06%	1.6141
No	447	36.94%	1.6141
Before US Watch DVDs In English	1135		
Yes	566	49.89%	1.7051
No	569	50.11%	1.7051
Now Watch DVDs In English	1141		
Yes	821	71.97%	1.4878
No	320	28.03%	1.4878
Before US Go To English Movies	1291		
Yes	579	44.88%	1.6452
No	712	55.12%	1.6452
Missing			
Now Go To English Movies	1291		
Yes	632	48.95%	1.6481
No	659	51.05%	1.6481

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding.

^Respondents were randomized into 5 subsets, each getting one of the following media subsets: newspapers, DVDs, going to English movies, television, or radio

Table 4: Language Contexts and Self-Rated Understanding of English

Percentage (n)	Self-Rating of English Understanding				
	Very Well	Well	Not Well	Not At All	Missing
Languages Spoken at Home					
English	9.37 (591)	5.25 (331)	1.30 (83)	0.07 (5)	0.02 (2)
Not English	12.30 (776)	21.09 (1330)	28.40 (1792)	18.55 (1170)	0.05 (3)
Missing	0.50 (32)	0.56 (36)	0.98 (62)	1.41 (90)	0.06 (4)
Languages Spoken at Work					
English	18.54 (1169)	16.37 (1032)	7.59 (479)	0.28 (18)	0.03 (2)
Not English	2.54 (160)	8.37 (528)	20.53 (1295)	16.62 (1048)	0.03 (2)
Missing	1.09 (69)	2.16 (137)	2.57 (162)	3.15 (199)	0.08 (5)
Languages Spoken with Friends					
English	12.96 (818)	7.23 (456)	1.45 (92)	0.05 (4)	--
Not English	8.69 (548)	19.06 (1203)	28.18 (1777)	18.52 (1168)	0.08 (5)
Missing	0.52 (32)	0.60 (38)	1.06 (67)	1.46 (93)	0.0698
Languages Spoken with Spouse					
English	7.10 (448)	3.29 (208)	0.62 (40)	0.01 (1)	0.02 (2)
Not English	9.91 (625)	18.51 (1168)	24.43 (1541)	17.39 (1097)	0.11 (7)
Missing	5.16 (325)	5.1 (322)	5.63 (356)	2.64 (167)	--
Languages Spoken at Religious Services					
English	6.87 (433)	5.4 (340)	2.26 (143)	0.55 (35)	--
Not English	5.87 (370)	10.46 (660)	15.41 (972)	8.38 (529)	.06 (4)
Missing	9.43 (595)	11.04 (697)	13.02 (821)	11.11 (701)	.08 (5)

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding.

Table 5: Language Contexts and Average Proportion of English Media Use

Proportion (n)	Television		Radio	
	Before	Now	Before	Now
Languages Spoken at Home				
English	0.44 (152)	0.86 (164)	.32 (124)	.79 (136)
Not English	.25 (869)	0.59 (923)	.23 (747)	.54 (723)
Languages Spoken at Work				
English	.37 (511)	.79 (554)	.34 (421)	.76 (435)
Not English	.18 (462)	.49 (486)	.15 (414)	.42 (393)
Languages Spoken with Friends				
English	.45 (241)	.84 (249)	.38 (197)	.82 (214)
Not English	.22 (779)	.57 (838)	.20 (670)	.51 (642)
Languages Spoken with Spouse				
English	.38 (83)	.84 (85)	.28 (63)	.86 (72)
Not English	.24 (710)	.59 (744)	.21 (604)	.53 (577)
Languages Spoken at Religious Services				
English	.50 (183)	.83 (193)	.37 (158)	.81 (150)
Not English	.20 (419)	.56 (459)	.23 (337)	.53 (340)

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding.

Table 6: Language Contexts and Region of Origin

Percentage (n)	Europe & Central Asia	East Asia, South Asia & the Pacific	Latin America & the Caribbean	Sub- Saharan Africa	Middle East & North Africa
Languages Spoken at Home					
English	3.10 (194)	4.98 (311)	5.24 (328)	1.85 (116)	0.59 (37)
Not English	8.77 (549)	24.55 (1534)	41.42 (2588)	3.03 (190)	2.88 (180)
Missing	0.41 (26)	1.04 (65)	1.79 (113)	0.08 (6)	0.16 (10)
Languages Spoken at Work					
English	7.01 (438)	14.67 (917)	15.74 (984)	3.25 (203)	1.97 (123)
Not English	4.14 (259)	12.49 (780)	29.34 (1833)	1.11 (70)	1.18 (74)
Missing	1.14 (71)	3.41 (213)	3.40 (213)	0.61 (38)	0.49 (31)
Languages Spoken with Friends					
English	3.99 (250)	7.85 (491)	6.17 (386)	2.41 (151)	0.97 (61)
Not English	7.89 (493)	21.55 (1347)	40.52 (2532)	2.42 (152)	2.47 (155)
Missing	0.41 (26)	1.17 (73)	1.78 (112)	0.14 (9)	0.20 (13)
Languages Spoken with Spouse					
English	2.29 (144)	3.07 (192)	3.99 (250)	1.00 (63)	0.41 (26)
Not English	8.23 (514)	23.05 (1440)	34.58 (2161)	2.57 (161)	2.20 (138)
Missing	1.77 (111)	4.45 (278)	9.90 (619)	1.39 (87)	1.03 (65)
Languages Spoken at Religious Services					
English	2.22 (139)	6.05 (378)	4.37 (273)	2.05 (128)	0.32 (20)
Not English	3.69 (231)	8.71 (544)	25.61 (1600)	1.24 (78)	1.06 (66)
Missing	6.38 (399)	15.81 (988)	18.49 (1156)	1.67 (105)	2.26 (141)

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding.

Table 7: Language and Time Contexts

Mean (n)	Age	Age Left Country of Birth	Years Lived in US
Languages Spoken at Home			
English	33.78 (875)	27.10 (859)	6.29 (864)
Not English	39.94 (5105)	34.17 (4974)	5.70 (4990)
Languages Spoken at Work			
English	34.54 (2843)	27.84 (2792)	6.72 (2800)
Not English	42.14 (2825)	36.57 (2739)	5.46 (2749)
Languages Spoken with Friends			
English	33.29 (1420)	26.61 (1391)	6.77 (1394)
Not English	40.54 (4549)	34.85 (4433)	5.59 (4451)
Languages Spoken with Spouse			
English	31.74 (459)	24.80 (452)	6.94 (452)
Not English	42.65 (4288)	36.77 (4182)	5.76 (4196)
Languages Spoken at Religious Services			
English	37.70 (1007)	32.44 (997)	5.28 (1000)
Not English	39.34 (2440)	32.28 (2368)	6.92 (2377)

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding.

Table 8: Language Contexts and Years of Education

Mean (n)	Years of Education	Years of Education in the US
Languages Spoken at Home		
English	14.58 (877)	1.81 (875)
Not English	11.07 (5110)	0.63 (4929)
Languages Spoken at Work		
English	13.98 (2845)	1.44 (2838)
Not English	9.68 (2830)	0.34 (2672)
Languages Spoken with Friends		
English	14.82 (1420)	2.12 (1416)
Not English	10.74 (4557)	0.44 (4377)
Languages Spoken with Spouse		
English	14.79 (458)	1.98 (459)
Not English	11.03 (4296)	0.37 (4116)
Languages Spoken at Religious Services		
English	14.19 (1006)	1.07 (1000)
Not English	10.53 (2447)	0.74 (2354)

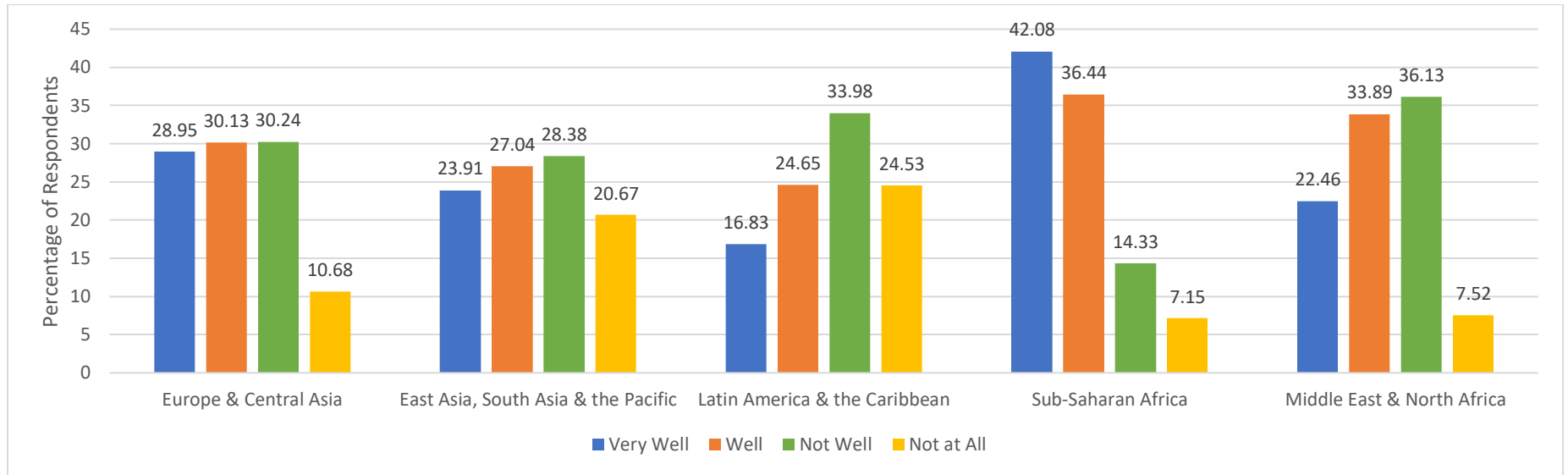
Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding

Graph 1: Self-Reported English Speaking Skills by Region of Origin

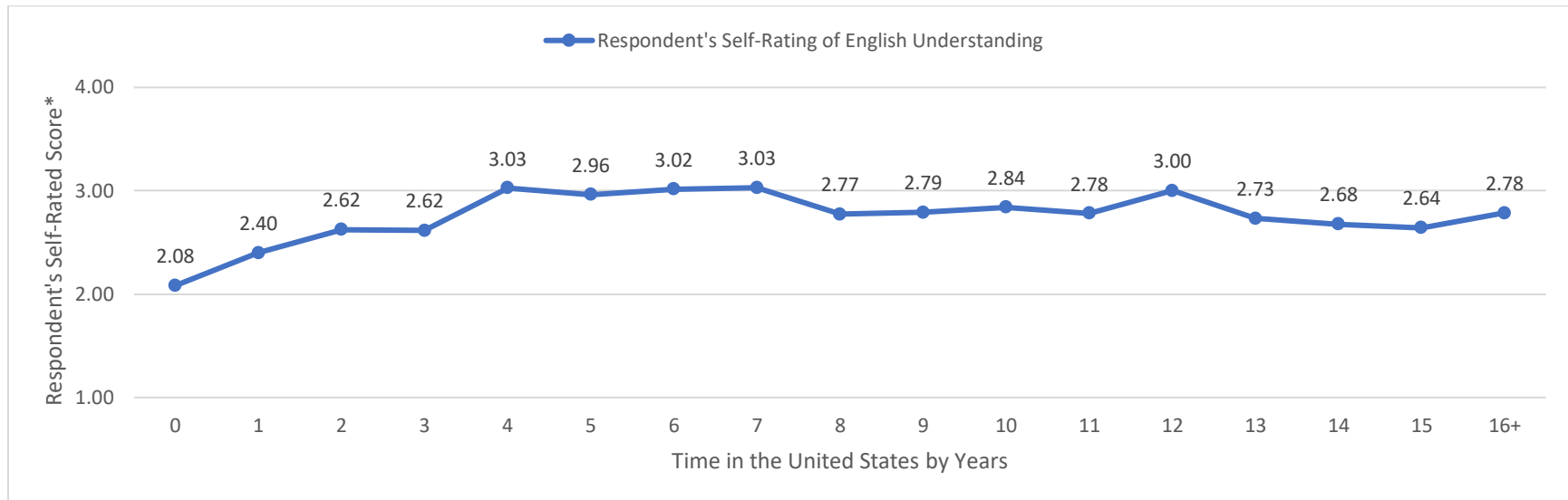


Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

Graph 2: Average Self-Rating of English by Time in the US



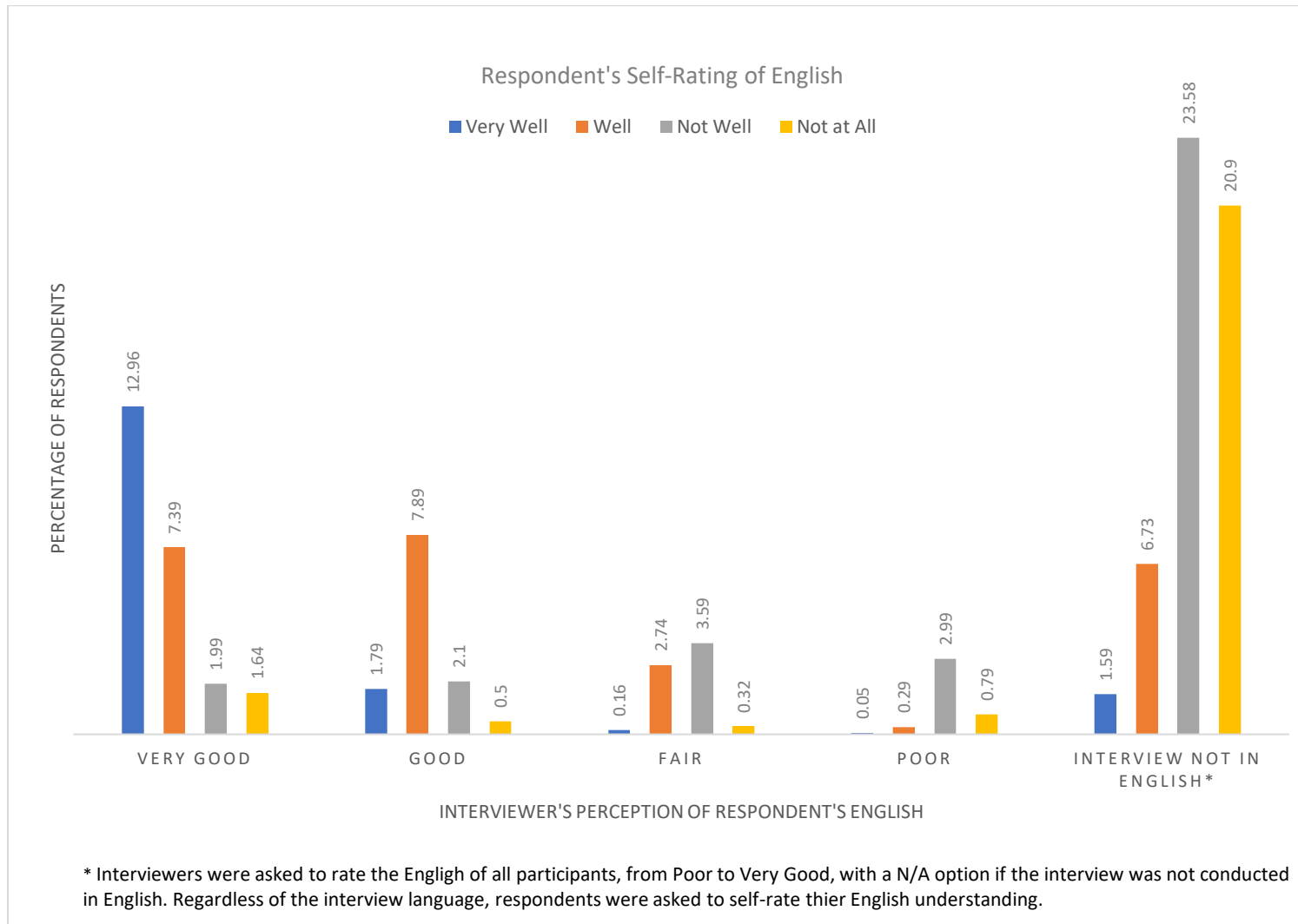
*Respondents were asked to rate how well they felt they understood English with possible answers being a Likert scale of 'very well', 'well', 'not well', and 'not at all'. Answers were coded on a scale from 1 to 4, with 'not at all' being a 1 and 'very well' being a 4

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

Graph 3: Self-Ratings and Interviewer Perceptions of Respondent's English Understanding



Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

Table 9: Self-Rating of English Understanding and Average Proportion of English Media Use

Proportion (n)	Television		Radio	
	Before	Now	Before	Now
How Well Do You Understand Spoken English				
Very Well	0.42 (261)	0.81 (275)	0.38 (219)	0.80 (239)
Well	0.33 (303)	0.72 (330)	0.31 (248)	0.68 (242)
Not well	0.20 (296)	0.57 (318)	0.17 (254)	0.53 (244)
Not at all	0.10 (160)	0.32 (164)	0.05 (149)	0.17 (133)

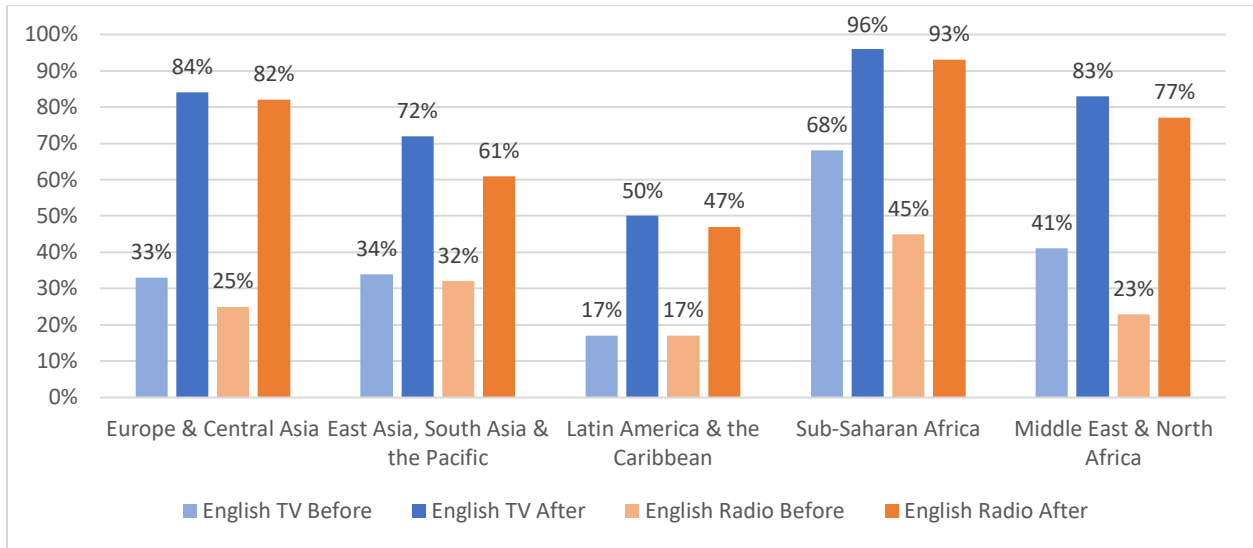
Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

3: Estimates are survey adjusted. Distributions may not sum to 100% due to rounding.

Graph 4: Percentage of TV and Radio Use in English Before and After Immigration to the US



Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English

Table 10: Spearman Correlations of Language Use

Variables	Languages Spoken at Home	Languages Spoken at Work	Languages Spoken with Friends	Languages Spoken with Spouse	Languages Spoken at Religious Services	How Well Do You Understand Spoken English	How Well Do You Speak English	Any English Classes Before the US	Any English Classes in the Last Twelve Months	Interviewers Perception of Respondent's English	Was any Other Language Used to Conduct Interview	Interview Language (Top 5 Non-English Languages)
Languages Spoken at Home	1.00	0.33	0.47	0.65	0.36	0.38	0.39	0.18	-0.07	0.37	-0.37	0.07
Languages Spoken at Work	0.33	1.00	0.48	0.28	0.36	0.64	0.65	0.28	-0.04	0.50	-0.47	0.02
Languages Spoken with Friends	0.47	0.48	1.00	0.40	0.38	0.52	0.54	0.22	-0.08	0.48	-0.47	0.04
Languages Spoken with Spouse	0.65	0.28	0.40	1.00	0.32	0.35	0.36	0.17	-0.05	0.33	-0.30	0.08
Languages Spoken at Religious Services	0.36	0.36	0.38	0.32	1.00	0.39	0.40	0.17	-0.06	0.38	-0.37	0.02
How Well Do You Understand Spoken English	0.38	0.64	0.52	0.35	0.39	1.00	0.91	0.36	-0.08	0.64	-0.58	0.07
How Well Do You Speak English	0.39	0.65	0.54	0.36	0.40	0.91	1.00	0.36	-0.08	0.66	-0.59	0.07
Any English Classes Before the US	0.18	0.28	0.22	0.17	0.17	0.36	0.36	1.00	0.16	0.27	-0.24	0.02
Any English Classes in the Last Twelve Months	-0.07	-0.04	-0.08	-0.05	-0.06	-0.08	-0.08	0.16	1.00	-0.14	0.13	-0.02
Interviewers Perception of Respondent's English	0.37	0.50	0.48	0.33	0.38	0.64	0.66	0.27	-0.14	1.00	-0.68	0.07
Was any Other Language Used to Conduct Interview	-0.37	-0.47	-0.47	-0.30	-0.37	-0.58	-0.59	-0.24	0.13	-0.68	1.00	.
Interview Language (Top 5 Non-English Languages)	0.07	0.02	0.04	0.08	0.02	0.07	0.07	0.02	-0.02	0.07	.	1.00

Eigen	Alpha	KMO
3.542	0.83	0.80

Variables Kept	Variables Removed
Languages Spoken at Home	Interview Language (Top 5 Non-English Languages)
Languages Spoken at Work	
Languages Spoken with Friends	
Languages Spoken with Spouse	
Languages Spoken at Religious Services	
How Well Do You Understand Spoken English	
How Well Do You Speak English	
Any English Classes Before the US	
Any English Classes in the Last Twelve Months	
Interviewers Perception of Respondent's English	
Was any Other Language Used to Conduct Interview	

Eigen	Alpha	KMO
3.547	0.81	0.83

Variables Kept	Variables Removed
Languages Spoken at Home	Interview Language (Top 5 Non-English Languages)
Languages Spoken at Work	How Well Do You Understand Spoken English
Languages Spoken with Friends	How Well Do You Speak English
Languages Spoken with Spouse	Any English Classes Before the US
Languages Spoken at Religious Services	Any English Classes in the Last Twelve Months
Interviewers Perception of Respondent's English	
Was any Other Language Used to Conduct Interview	

Notes:

1: Data from the New Immigrant Survey: Round 1, adult survey. n= 6,233 (weighted n= 6307)

2: Respondents were excluded if they did not move directly to the US from their birth country, spoke English at home at the age of 10, and have never spoken a language other than English