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Late Starts Leading to Native-Like Pronunciation In Second Language Acquisition

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LATE STARTS LEADING TO NATIVE-LIKE PRONUNCIATION IN SECOND LANGUAGE ACQUISITION

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ABSTRACT

This study sought to investigate the self-perceived factors that led adult language learners, who acquired L2 after the critical period, to acquire native like pronunciation in their second language. Given the impact of accent and pronunciation on perceptions of a speaker's status, intelligence and/or competence, there exists a need for thoughtful and comprehensive research into why adult second language learners reach different outcomes in pronunciation attainment. A qualitative phenomenological design was employed to recruit adults who began learning English as an L2 after 12 years old but attained a native-like English accent. Participants recorded vocal samples that were presented with native speaker control-recordings to three native speaking judges. Two participants were judged to be native-like and then were invited to separate semi-structured interviews. These interviews collected data on the nature of the participants' language acquisition experience. Results revealed common experiences, supported by previous research, of a.) Interest in L2 beyond academics, b.) L2 and identity construction, and c.) cultivation of L2 social networks in target speaking countries. Results also revealed experiences that diverged from previous research relating to d.) use of metacognitive strategies and e.) attitudes toward pronunciation in the L2. These findings expand on the limited scholarship exploring the development of exceptional pronunciation in adults and provide a model of a targeted qualitative methodology for future research to continue investigating the unique experience of these exceptional learners.

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LIST OF ACRONYMS (or) ABBREVIATIONS

AO – Age of learning onset
AOA – Age of arrival
CPH – Critical period hypothesis
ERP – Event related potentials
FDH – Fundamental difference hypothesis
fMRI – Functional magnetic resonance imaging
IELTS- International English Language Testing System
L1 – First language
L2 – Second language
LAN – Left anterior negativity
MMN – Mismatched negativity
MRI – Magnetic resonance imaging
PET – Positron emission topography
PI – Primary investigator
SDO – Social dominance orientation
SLA – Second language acquisition
STEM – Science, technology, engineering and math
TOEFL- Test of English as a Foreign Language

CHAPTER ONE: INTRODUCTION

Background of the Problem

Pronunciation is an important aspect of language production that informs perceptions of a second learner's mastery, particularly when second language (L2) learners interact with native speakers. Bonny Norton highlighted this phenomenon in 2000 when she described the struggles of her immigrant study participants who wanted to be seen as citizens in their adopted country, Canada, and as human beings worthy of decent treatment (Norton, 2000). Her participants explained how their accents may have precipitated alienation between them and native speakers while trying to accomplish basic but important tasks, like gaining the trust of coworkers or just trying to feel included as a citizen. Norton's case studies have important sociolinguistic implications. Accents, both foreign and colloquial, mark the speaker's place within a socially constructed hierarchy. This can affect the lives of learners in many ways. For example, L2 speakers with native-like pronunciation might be presumed by native speakers to have more mastery of an L2, even when their peers with less native pronunciation have a better grasp on grammar, writing, listening or a host of other skills. Additionally, due to perceptions of them being cultural insiders, L2 speakers with native-like pronunciation might gain access to more opportunities, prestige, or social groups than their peers with a perceived non-nativelike accent. Pronunciation as reflected in accent is therefore an important gatekeeper to the coveted status of linguistic insider.

Previous research into ultimate attainment in second language acquisition has attempted to investigate why some L2 speakers achieve nativelike pronunciation (in addition to other competencies) while most others do not. Lenneberg (1967) proposed the Critical Period Hypothesis (CPH), which has become highly referenced in the field of first and second language

acquisition. The CPH states that children who learn a first language (L1) before or during the age of puberty (roughly age 12 or 13) almost uniformly achieve native fluency in their first language. However, research has shown that, if delayed until after the learner is of five years of age, L1 learners experience impaired acquisition, particularly in the areas of morphosyntax and phonology (Curtiss, 1988, as cited in Herchensohn, 2007). Lenneberg's hypothesized reason is that neurological changes, which occur during puberty, prevent learners from having access to linguistic abilities that were available at younger ages (Lenneberg, 1967).

This hypothesis, which focused on first language acquisition, has created a wave of research attempting to evaluate the existence of a critical period for second language acquisition (SLA), with inconclusive results. A summary of studies has found insufficient evidence to conclude whether adult learners or young learners are more successful at learning an L2 (Ryan & Singleton, 2004). Additionally, while investigating whether adult second language acquisition is fundamentally different than child SLA, Ryan and Singleton have concluded that L2 learners and L1 learners appear to follow very similar learning routes, and older and younger L2 learners also follow similar patterns of acquisition.

However, Bley-Vroman (1990) refuted the claim that child learning was the same as adult learning, by pointing out two things: 1.) that the processes relevant to adult learning (explicit instruction, motivation, or goals) are unnecessary for child language learning and 2.) that the existence of variation in adult learning outcomes signals a difference from child learning, where variation in outcome is negligible. Bley-Vroman argued that by acknowledging this fundamental difference between child learning and adult learning, educators could more efficiently develop teaching strategies that cater to and increase the success of adult learners.

Bley-Vroman's Fundamental Difference Hypothesis (FDH) is further discussed in Chapter Two of this dissertation.

There has been a robust tradition of research into ultimate attainment in L2, which uses the age of learning onset (AO) as an independent variable and measures outcomes across a variety of linguistic domains including phonology, grammar, morphology and syntax. A majority of this research has shown that younger learners are largely more successful in their ultimate acquisition of a second language than older learners. But research specifically focused on ultimate attainment in pronunciation acknowledges that there exists a minority of late L2 learners who began learning their L2 after the CPH and appear to have achieved nativelike L2 pronunciation (Birdsong, 1992; Bongaerts et al, 1997, 1999; Bongaerts, Mennen & Van der Slik, 2000; Coppieters, 1987; Hyltenstam & Abrahamsson, 2003, 2009). Thus, the idea that age presents a biological constraint to the achievement of nativelike L2 does not appear to have conclusive evidence. More research needs to be done to investigate learners who successfully achieved L2 pronunciation to develop more comprehensive theories. Research into these exceptional cases is rare and difficult to perform because these exceptional cases are difficult to locate and recruit, but a robust research effort to address this gap would make important progress towards a more conclusive understanding of this phenomenon.

The relevance and importance of these learners' achievements deserve more in-depth and systematic analysis. Any insights gleaned from their experience could potentially inform researchers about how phonological attainment is best achieved, and under what conditions nativelike pronunciation can be attained.

Purpose of the study

This case study examined and described the language acquisition experiences of second language learners who have gained nativelike pronunciation and who have started their second language learning after puberty. Their techniques of learning, their attitudes towards second language, and their motivations for learning were of particular focus of this study. Also of interest was whether any common themes emerged from the accounts of each L2 learner that may be relevant to second language learning.

Research Questions

The present inquiry was centered upon the following question: What self-perceived factors influence the ultimate attainment in pronunciation for adult L2 learners who are late starters?

Importance of the Study

Gaining insight on the conditions of nativelike phonological acquisition would have many potential benefits to second language research. Using the research findings from this study, L2 teaching could begin to address the sociolinguistic issues of speakers experiencing exclusion based on the way they speak. Additionally, this study could provide greater insight into the balance between cognitive and affective factors in second language learning. We may begin to have more answers towards the ultimate limits of human ability and adaptability when it comes to language learning. But most importantly, this study will aid in developing a more conclusive explanation to the influence of age on second language acquisition. Its findings could either further strengthen or problematize age's impact. It may also provide future direction of research into ultimate attainment, especially in the area of pronunciation.

Qualitative research is not unusual in the area of ultimate attainment, but there are few studies that investigate the experiences of successful late learners with thorough qualitative methodologies. Most research on L2 age of onset and ultimate attainment focuses on developing instructional methodologies that reliably prove that ultimate attainment has been achieved in all linguistic domains. Many of these studies acknowledge that late L2 learners who have achieved nativelike status exist. But these studies do not go further to investigate these cases through phenomenological, ethnographic, narrative, or case-study approaches. There is qualitative research that explores cases of talented L2 learners, however these learners are not necessarily identified as late learners. Further, there are a few studies that identified late learners with nativelike attainment, and these studies also provided some valuable, though limited qualitative data on these cases. However, the qualitative elements of these studies are not unified across all cases in investigative purpose, and thus lack any consistently unified conclusion that could be surmised about the experiences of these case subjects.

Procedures

This study sought to expand on previous findings that cognitive flexibility, selective approach to learning situations, motivation and social orientation are factors that could lead to the acquisition of exceptional pronunciation outcomes in a second language (Moyer, 2014). The broad goals of this study were to seek a sample of L2 learners in the advanced stages of learning who possess nativelike levels of pronunciation. Once recruited, these learners' experiences were studied to determine if their profiles match the characteristics previously described, and if any new characteristics from their shared experiences could be identified. In divergence with previous studies that have explored this phenomenon, all subjects recruited underwent the same

test, questionnaire, and interview procedures. All subjects in this study spoke English as their L2, and their L1s and countries of origin were nonhomogeneous.

To recruit and test subjects for eligibility, an adapted framework was used to determine English speakers with nativelike pronunciation. Subjects were given the same spoken task: they were asked to read a paragraph excerpt called The Tiger and the Mouse. The passage was created and validated by the Prosody in a Foreign Language (LeaP) Project (Gut, 2004), and it contains all of the phonetic sounds in the English language. Subjects' vocal responses to the task were recorded and presented to a group of three native English-speaking raters. The recording samples were presented in randomized order and assigned code names. Additionally, recordings of native speakers performing the same task were also included in the presentations. The native speaking raters used a rating guide adapted from Moyer (1995), which asks *Yes/no: whether or not the subject is a native speaker of English*. This rating guide also included a space to write comments.

The adapted questionnaire was distributed to all individuals being screened in this study. It surveyed the following factors:

1. Biological age at first immersion and instruction (people who began before age 12 were excluded from the final part of the study).
2. Exposure.
3. Instruction in pronunciation.
4. Motivation.
5. Psychological/affective factors.

Participants that were identified by judges as having nativelike pronunciation were then selected to participate in the next stage of the study. This study successfully recruited N = 2 participants into the qualitative data collection stage.

In the qualitative data collection stage, the primary investigator (PI) conducted semi-structured interviews with the selected participants. These interviews investigated the journey of each participant's English language acquisition and attempt to identify unique and/or shared characteristics that may explain the participants' achievement. The questions were designed to elicit detailed information about the participants 'background, techniques used for practicing pronunciation, motivation for mastering pronunciation, and attitudes towards the importance of mastering pronunciation. The interview protocol can be found in the appendix.

Limitations of the study

This study has several limitations that will briefly be discussed. Firstly, its focus is exclusively on pronunciation of advanced level learners and on accent in particular and does not focus on other factors of language acquisition such as grammar and vocabulary. Therefore, the ultimate findings cannot be interpreted as comprehensive conclusions on ultimate attainment; they only focus on the pronunciation aspect, which relates to how other individuals perceive an L2 learner's ultimate attainment.

Secondly, the subjects in this study were advanced learners at the end-state of their language acquisition. This study does not focus on individuals at various points in their language development. Nevertheless, conclusions might generate insights that are useful for learners who are not yet in the advanced stages of language learning.

Thirdly, to identify nativelike L2 learners, this study relies on exercises conducted under artificial conditions; therefore, participants' responses may not represent natural responses. Activities such as reading passages aloud may result in unnatural production being retrieved for analysis. This may also be caused by learners' self-consciousness and awareness of their performance.

The fourth limitation is that, although this study seeks to ultimately find commonalities among a group of advanced learners, findings should not be confused as correlation or causation, as this is not a quantitative study. Future study designs may build upon the findings here to create investigations that explore correlation.

Finally, due to the small sample size of this study, its findings cannot be generalized to larger populations of learners on a statistical level. It is the goal of the researcher that the findings offer value to readers via their *transferability*, which may allow readers to connect and apply findings to their own experience with language learning/teaching.

Definition of terms

Learner- Refers exclusively to learners of a second language.

L1 – native or first language. An L1 is a language that a person acquires from the earliest stages of their life and is their primarily language of communication (at least until a person begins acquisition of an L2) In this study, all subjects had a native language that is other than English.

L2- second or foreign language. Also referred to as *target language* in language instruction. L2 is a second language acquired through instruction, exposure, or a combination of these factors. Sequentially, it must be acquired after a person has acquired their L1. Persons who have acquired two languages simultaneously are *bilinguals;* these are not persons of interest in this investigation. In this study, all subjects spoke English language as their L2.

Pronunciation – in general, refers to the way the sounds of the word are produced/expressed by a speaker. For the purpose of this study, pronunciation is intended to refer to a person's accent. This means that the study isn't focused on whether a speaker's L2 sounds

are intelligible or unintelligible. This study is focused on whether a speaker's L2 sounds are similar or different to those same sounds produced by a native speaker.

Critical period – a term coined by Lenneburg (1967) to describe a period from birth to approximately the age of puberty. Studies have shown that learners who begin language instruction during this period tend to have significantly higher long-term achievement than those who begin instruction afterwards. This study defines the critical period as age 12 and earlier.

Nativelike pronunciation- Pronunciation of an L2 by a non-native speaker that is comparable to an L1 speaker's pronunciation. When judged by native speakers, L2 speakers with nativelike pronunciation could pass for L1/native speakers.

Late-learner – a person who began second language acquisition after the critical period.

Successful late-learner – a late learner who, despite beginning after the critical period, has managed to achieve high levels of achievement in second language acquisition. Of particular focus are late learners who have achieved nativelike pronunciation.

CHAPTER TWO: LITERATURE REVIEW

This study sought to identify the factors that influence ultimate attainment in pronunciation for adult L2 learners. This literature review discusses four concepts key to this study's execution: First, it discusses the importance of second language pronunciation, in both the second language context and the foreign language context. Second, it surveys the fundamental theoretical underpinnings associated with ultimate attainment in language. Thirdly, this chapter surveys empirical research into the field of ultimate attainment and discusses methods and tools that have been used to investigate this phenomenon. Finally, this chapter summarizes the relevant insights from previous research and addresses the gaps that this study fulfills.

Importance of Pronunciation in in language and society

Pronunciation, as expressed by accent, has broad social consequences for speakers. This is true when speaking a first language with a regional accent or speaking a second language with a foreign accent- even when communicating with other second language speakers (i.e., English as a lingua franca) (Fuertes, Potere & Ramirez, 2002). Broad research on both regional and foreign accents has shown that accent can have critical effects on the perceptions of speakers in ways that can influence their success in important domains. This section will report the findings of research into regional accents, as well as foreign accents when spoken in both the target language communities and amongst other second language speakers.

Effects of regional accents.

Regional accents refer to the variety of accents spoken among speakers of the same first language. Broad research has shown major differences in perceptual judgements based on the regional accent of the speaker. Listeners are keenly aware of differences in accents that are

considered high status or low status, and they influence perceptions of a variety of traits, including: status and solidarity (Ryan & Carranza, 1975), intelligence (Amira, Cooper, Knotts & Wofford, 2018; Cantone, Martinez, Willis-Esqueda & Miller , 2019; Cross, DeVaney & Jones, 2001; Rakic, Steffens & Mummendey, 2011; Shepard, 2011), trustworthiness (Amira *et al,* 2018; Cantone *et al,* 2019; Frumkin & Stone, 2020), competence (Amira *et al,* 2018; Rakic, Steffens & Mummendey, 2011), levels of education (Cantone *et al,* 2019; Cross *et al,* 2001; Frumkin & Stone, 2020; Kurinec & Weaver, 2019), hireability (Rakic *et al,* 2011), and even culpability in crime (Cantone *et al,* 2019; Frumkin & Stone, 2020; Kurinec & Weaver, 2019). The following section will discuss the implications for accent who must navigate through the domains of business, law, and education.

Research focusing on the context of business or work context have come to consistent conclusions that standardized and high status accents (i.e., British received pronunciation) confer the benefits of perceived competence and hireability, desirability, and positive branding. In contrast, a regional or low status accent is frequently stigmatized, resulting lower ratings in competence, honesty, and hireability. Rakic, Steffense and Mummenday (2011) found that their German speaking participants held significantly different perceptions of job applicants speaking 3 regional varieties of German. 98 participants listened to recorded job interviews by speakers of Berlin (marked as high status), Bavarian, and Saxon German. They were then asked to evaluate each speaker's competence, hireability, and sociointellectual status. Their results found that Bavarian and Saxon speakers were rated lower in perceived competence and hireability than Berlin German speakers, and that Saxon German speakers rated lower than Bavarian and Berlin German speakers in sociointellectual status. Speakers of the high status Berlin variety were considered, across all variables, the most desirable to earn the job.

Research also investigated how accents can affect the appeal of political candidates (Amira *et al,* 2018). In this study, 757 participants from Alabama and Connecticut were invited to evaluate two campaign speeches: one from a standard-accented candidate and another from a southern-accented candidate. Results showed that the candidate with a southern accent was perceived as less trustworthy, less honest, less intelligent, and less competent than the candidate with the standard accent.

Research has also demonstrated that accent can influence persuasiveness and the ability to sell items. Morales, Scott and Yorkston (2013) carried out several studies to measure the effect of accents on brand evaluation and brand recall. In one of their studies, they separated 262 participants into four experimental groups, and asked them to evaluate a radio ad for either a hotel or a bed-and-breakfast, which was delivered either by a speaker of British received pronunciation or by a speaker of Southern American English. They found that products were rated more favorably when advertised with a British Received Pronunciation accent. Furthermore, they found that even though the Southern American accent was less favorable in associating products, evaluators who heard it were better able to recall the products advertised than those who heard the British received pronunciation ad. This led researchers to conclude that familiarity with an accent (as in the case of Southern American English) did not result in favorability when compared to a less familiar but more socially desired and standardized accent.

Research into the influence of accents in the courtroom and the legal domain have revealed significant disparities in how speakers are viewed and how race interacts with accent to further exacerbate discriminatory consequences for speakers. In the USA, this was epitomized famously in the 2013 trial of George Zimmerman, who was accused of the murder of an unarmed Black teenager, Trayvon Martin, in Sanford, Florida (Carlin, 2016). The prosecution brought

Rachel Jeantel, Martin's friend who had witnessed the murder occur over the phone to testify. Her testimony contradicted the account of Zimmerman's, claiming that Zimmerman had instigated the altercation that led to Martin's death. However, her testimony, which was peppered in the colloquial language of African American Vernacular English (AAVE), was dismissed by the courtroom as rude, improper, and lacking in credibility. Zimmerman's defense attorney, Don West, emphasized the non-standards of Jeantel's accent as a strategy to cast doubt on her testimony. He frequently asked her to repeat herself, repeated her responses back to her, and at one point asked her if she could write or speak English. The focus soon turned from the content of Jeantel's testimony to the credibility and properness of her accent in a courtroom setting. Her testimony, based on accent alone, was cast as unreliable in the trial. Zimmerman, the accused in the case, was eventually acquitted.

The case of Zimmerman v State (2013) highlights that accent discrimination can lead to disparate outcomes in justice. This phenomenon has been supported by research that has found accent to significantly affect perceptions of critical character traits, including status, education, and credibility (Cantone *et al*, 2019; Frumkin & Stone, 2020; Kurinec & Weaver, 2019), likeability (Cantone *et al*, 2019), and culpability (Cantone *et al*, 2019; Frumkin & Stone, 2020). These findings have observed biases for both defendants and witnesses in both criminal and civil court contexts.

A recent study by Frumkin and Stone (2020) investigated perceptions of eyewitness accounts of a criminal case (theft and burglary) based on the accent of the speaker. The study was based in the United Kingdom, and recruited 254 racially diverse, student-aged participants to listen to witness testimony. They were split into two groups, with one group receiving testimony by a speaker with a high status accent, and the other group receiving testimony from a

speaker with a low status accent. The participants were asked to evaluate the testimonies based on favorability (operationalized as accuracy, witness confidence, strength of evidence, perceived truthfulness, credibility, ability of testimony to convince others, guilt assigned to culprit, and pleasing nature of the witness). The results found that witnesses with high status accents were perceived to have higher education and occupation than low status speakers. Additionally, across all conditions, the high status accent was rated more favorably than the low status accent. Race was also found to significantly interact with accent, as accent evaluations impacted Black witnesses more intensely than it did White witnesses. The researchers concluded that the status of the accent was more strongly tied to favorability ratings than any other demographic factor, including race and age.

Another study based in the USA measured race and accent bias on juror decisions for Black, Mexican, and White defendants in a civil case of negligence (Cantone *et al*, 2019). 189 undergrad students, a majority of whom were white, served as mock jurors. They were randomly sorted in to 6 groups, each with different defendant conditions: A Black, White or Mexican defendant with a standard accent, or a Black, White or Mexican defendant with a colloquial accent. Results found that while accent by itself had a marginal effect, accent interacted with race to produce a significant effect (as was found in Frumkin & Stone, 2020). The Black, colloquial accented defendant was found to be the most negligent while the White defendant, regardless of accent, was found the least negligent. Participants also found that colloquially-accented defendants' actions fell below the standard of care, in comparison to standard-accented defendants. Additionally, colloquially-accented defendants scored lower on a personality scale that measured the characteristics of intelligence, social class, likeability, and education. These defendants were also less likely to be believed that they had never been in a prior car accident,

and Black-accented defendants were believed to most likely have been a prior defendant. Finally, the research found that the social beliefs of the jurors influenced their perceptions of negligence; those with more conservative social beliefs were more likely to find colloquially-accented defendants negligent regardless of race, while those with more liberal social beliefs were less likely to find any defendant negligent.

Another study investigated the effect of accent on juror decision making in a criminal case (Kurinec and Weaver, 2019). 126 participants were gathered to evaluate defense testimony of two different dialect speakers: one speaker of General American English, and one speaker of African American Vernacular English. The participants listened to recorded testimony from the defendants and were then asked to make an evaluation. The results showed that while accent did not affect the overall verdict, it did affect perceptions of the defendants' professionalism and education, with the African American Vernacular speakers being evaluated as less professional or educated. Speakers of this dialect were given lower evaluations for their witness testimonies than General American English speakers.

Accent has also been shown to influence perceptions of students and teachers in the field of education. Research suggests that teachers evaluate student responses less favorably when they are delivered in regional accents, and often ascribe more positive evaluations to student responses given in standardized accents. Studies show that context can significantly affect listeners' reactions to regional accents, and that students with regional accents in educational contexts are penalized frequently for their accents rather than the content of their responses. Given the importance of education as a gate keeper to opportunities for career success and social mobility, accent discrimination has important implications for the success speakers with nonstandard accents.

Ryan and Carranza (1975) performed one of the earliest investigations into this phenomenon when they studied how students evaluated the accents of other students depending on the contexts of home or school. The study surveyed 63 students at an all-female high school with demographics split between Anglo-Americans, Black-Americans, and Mexican-Americans. These students listened to taped readings of two narrative paragraphs recorded by 34 high school males, 17 of whom spoke standard English and 17 of whom spoke with Mexican-American accented English (it is not specified whether this refers to Spanish-accented English or a dialect of English spoken by native speakers of Mexican-American descent). The participants were asked to make judgements of the speakers based on status and solidarity, in the context of home and school. Results showed that in both contexts, speakers with accented English were rated lower than standard speakers in both status and solidarity. But in the context of school, the status gap was significantly more divergent. Additionally, only status ratings were low enough for the researchers to consider them unfavorable; solidarity ratings, while similarly lower for accented speakers, never dropped below the neutral median score designated by the researchers. The implications support the notion that accented speakers are scrutinized more when they find themselves in a context that is considered formal or high status, such as the school context.

Later research would investigate the effect that accents had on teacher's perceptions of students to gain insight on differences in school experiences for students with regional accents. A study by Cross, DeVaney and Jones (2001) investigated how prospective teachers who were studying at a local college of education in the southeastern USA might perceive the accents of their future students. 111 participants were selected to give their evaluations of 5 different readings of a descriptive passage. Each reading was performed by a male speaker with a different accent. The researchers describe the 5 accents sampled as "High educated white southern, low

uneducated white southern, high educated black, low uneducated black, and Northeast"(p. 217), with the Northeast accent representing the standard accent. The participants were asked to evaluate each speaker based on intelligence, education, consideration, friendliness, honesty, trustworthiness, ambition, and social status. The results showed significant differences for each category except for honesty. The low white accent was rated the lowest on scores for intelligence and education, while the Northeast and high white accents were rated higher than the high black accent and the low black accent for the same categories. The high white accent scored higher for friendliness, consideration, and trustworthiness than both black accents as well as the low white accent. Finally, the low white accent received the lowest ratings for ambition and social status, while the high white accent was rated higher in these categories than the high black speaker. The researchers concluded that prospective teachers did perceive key character attributes differently depending on the accent of the speaker.

Michael Shepard conducted two studies that examined how teachers interacted with the spoken responses of diverse students. His first study (2011) recruited 57 teachers from the Los Angeles region to listen to recordings of 1st and 2nd graders giving scripted, spoken responses to questions about the Thanksgiving holiday, the police, and presidents. A total of 40 Black, White and Hispanic children were recorded reciting the responses. The teachers were blinded from the identity of the speakers and were instructed to evaluate the verbal answers. Results showed a significance in the teacher's ability to perceive the ethnicity of the speaker based on the spoken dialect in the recording. Though the responses were the same scripted response for all recordings, they were viewed less favorably if they were perceived as coming from minority speakers. Additionally, the research found that Black and Hispanic teachers evaluated perceived minority speakers even less favorably than White or Asian teachers, indicating that even amongst

theoretically sympathetic communities, a regional dialect will evoke a stigma in the school context.

Shepard's other study (2020) recruited 128 secondary school science teachers to evaluate spoken responses from African American, Hispanic, and White students in the 9th grade. For this study, the focus was on STEM (science, technology, engineering & math) education, and whether discrimination could explain the disparities of achievement in White, Hispanic, and African American students. The teachers listened to recordings of 10 scripted responses to 3 general science questions that were recorded by African American, Hispanic, and White students. The teachers were then asked to evaluate how well each response answers the question. Once again, teachers were blinded from the students' identities and only had access to voice recordings. Results from this experiment revealed that answers spoken by African American and Hispanic students were evaluated significantly less favorably than identically worded responses by White students. Dialect and accent were the key markers that led to this disparity. The researcher speculated that in a real school setting, the cumulative effect of negative evaluation for the same quality of work would, over time, adversely affect the motivation of African American and Latino students to pursue achievement in the fields of STEM.

Effects of foreign accents within target language communities.

Whereas a regional accent refers the different varieties of accents among speakers of the same language, a foreign accent refers to an accent of a language spoken by speakers with a different native language. For foreign language speakers attempting to navigate life within a native-speaking host country, a foreign accent can add significant obstacles. Research has shown that in business, educational and legal settings, foreign accents can elicit negative evaluations for the speakers' competency (Baquiran & Nicoladis, 2020; Kim, Roberson, Russo & Briganti, 2019), job suitability (Boyd, 2003; Kim *et al*, 2019; Sanchez & Khan, 2016; Schmidt, 2010),

hireability (Hansen & Dovidio, 2016; Leeman, 2012; Schmidt, 2010), and status (Callan, Gallois & Forbes, 1983; Kim *et al*, 2019). Furthermore, speakers with foreign accents are judged to be less comprehensible or accurate, even when objective measures prove that they were understood by listeners and did not make more mistakes (Boyd, 2003; Hansen & Dovidio, 2016; Sanchez & Khan, 2016). Speakers with foreign accents are also less protected by anti-discrimination laws in the US (Leeman, 2012), and can be vulnerable in courtrooms due to stigma (Frumkin, 2007), and an ignorance of linguistic scholarship and science (Rodman, 2002). The following section will further detail the effects of foreign accent in the domains of business, law, and education.

Research into the effects of foreign accent in the domain of business and work life has shown that foreign accents generate negative perceptions of competency, lower ratings for hireability, and subjective judgements of incomprehensibility (even with objective judgements that reach different conclusions). One recent study showed that foreign accents of Canadian English affected perceptions of competency in medical doctors (Baquiran & Nicoladis, 2020). The researchers recruited 161 Canadian university students, and randomly assigned them to listen to recordings of a doctor delivering health news to a patient. The participants were assigned to one of two groups: the first group featured a female doctor with a Standard Canadian accent, and the second group featured a doctor with a Chinese accent. In both groups, the participants were presented with a picture of a female Chinese doctor and were asked to evaluate the language use of the doctor. Results showed a significant effect for accent, with the foreign accented doctor perceived as less competent than the standard accented doctor. These perceptions were the same for both White Canadians and Chinese Canadians, indicating that in-group identification may not result in more tolerance. The researchers speculated that Chinese

Canadians may have given lower ratings to the Chinese accented doctor because of a mindset that foreign-accented speakers did not try hard enough to assimilate into mainstream culture.

Another study used foreign accents to investigate whether hierarchies within groups would serve as a predictor for hiring decisions (Hansen & Dovidio, 2016). The researchers also looked at the role of Social Dominance Orientation (SDO) in predicting biases against foreign accents. The researchers describe people with higher SDO scores as more likely to "exhibit a preference for social hierarchy, endorse domination of one group over other groups in a society, and desire to maintain or even increase the differences between social groups" (p. 2). To test this theory, 65 adults were recruited to listen to recordings of job applicants who were speaking with either an Asian foreign accent or a Latino foreign accent. The participants were asked how likely they were to recommend hiring the speaker. They were also asked about the level of difficulty in understanding the recording, and they were tested on the content of the recording in order to evaluate both subjective comprehensibility and objective comprehensibility. Finally, the participants took a survey to measure where they fell on a scale of SDO. Results showed that there were no significant effects for objective comprehensibility, which meant that participants did not struggle to understand one accent over the other. However, subjective comprehensibility had a significant effect, with Latino accents being evaluated as harder to understand. Participants with higher SDO scores were more likely to rate Latino accented recordings lower in comprehensibility, while there was no effect for Asian accented recordings. Hireability also saw significant effects; participants with higher SDO scores were less likely to recommend the speaker for a job, though there was no difference in preference for the Latino or Asian accented speaker. Researchers concluded that SDO can predict the desire to hire groups marked as outsiders by their foreign accents, and that bias can be stronger for groups lower in status than

groups higher in status. Also, the researchers noted that preconceived biases could predict a perceived lack of understanding, even when there was no objective lack of understanding. This perception could nevertheless result in a negative hiring result.

Kim *et al* (2019) conducted a qualitative study to explore the experiences of native and nonnative speakers when they interact with each other in the workplace setting. The study recruited 99 participants: 51 native English speakers and 48 non-native English speakers. The recruitment criteria included participants who were either a.) native speakers who had experience working with international colleagues, coworkers, or clients in the USA or b.) non-native speakers who had work experiences in the USA. The researchers conducted semi-structured interviews and surveys to collect data about each group's experience. The results reported that non-native speakers were aware that their accents produced bias and called their intelligence and competence into question. Participants reported that clients were skeptical of their ability to help because of their accents, and many reported experiencing fatigue from monitoring their actions and behaviors. Non-native speakers also reported subjectively experiencing a feeling of status loss. The results from native speakers reported that they experience anxiety based on concerns that non-native speakers will struggle to understand them and that non-native speakers will not be able to handle situations. Native speakers also report fatigue from monitoring their actions and said that they were likely to practice avoidance strategies to escape experiencing anxiety and negative emotions. The researchers concluded that biases resulting from foreign accents caused non-native speakers to internalize feelings of inferiority, and they also made native coworkers less willing to interact with non-native colleagues.

Robust research into foreign accent discrimination in legal domains is rare, though its presence in chronologized in the scholastic accounts of contemporary court cases and legal

environments relating to accent-based discrimination. Chakrabarty (2017) notes that while title VII of the U.S. 1964 Civil Rights act prevents discrimination on the basis of an individual's race, color, religion, sex or national origin, cases involving accent discrimination frequently fail to be protected in court under this act. The US Equal Employment Opportunity Commission, which is responsible for the enforcement of title VII, provides guidance on accent discrimination that states that an employer may not base a decision on an employee's foreign accent unless the accent substantially interferes with their job performance (EEOC, 1992). This clause sets a high burden for proving that bias is the cause of accent discrimination, and not utility for the occupation. This justification was used by courts to dismiss the suit that Sophia Poskocil, an immigrant from Colombia and experienced educator, filed against Roanoke County Schools in 1996 when she was denied employment 19 times for Spanish teaching positions. Despite working as an adjunct professor at a local college and receiving strong recommendations for her teaching skills, Poskocil was not employed due to student evaluations that claimed she was difficult to understand (Smith, 2005). Similarly, in the case of Fragante v City and County of Honolulu, the courts sided with the employer when Manual Fragante was turned down for a position at the Department of Motor Vehicles. The employer cited a perceived oral deficiency due to Fragante's Filipino accent, despite the fact that Fragante had completed all of his schooling in English, had a law degree, outperformed American students at US military schools, and outscored all other applicants on the civil service test required for the job (Smith, 2005).

In 2010, the US state of Arizona institutionalized this principle in its statewide education system by removing teachers from English as a second language classrooms if the teachers were deemed as having "heavy accents or other shortcomings in their English" (Leeman, 2012, p. 145). That same year saw Arizona pass state laws SB 1070, which allowed police to demand

documents from any person suspected of illegally being in the US, and HB 2281, which outlawed the teaching of ethnic studies in secondary schools. The coinciding of these three events led critics to accuses the Arizona Department of Education of engaging in discrimination, which generated enough concern to prompt a federal investigation. The move was roundly condemned by scholarly and professional organizations, including the National Council for Teachers of English (NTCE), and Teachers of English to Speakers of Other Languages (TESOL), arguing that it demonstrated a profound ignorance of language learning and language teaching, and that the policy would hurt students by depriving them of qualified teachers. A settlement was eventually reached with the US Department of Justice, prohibiting the state agencies from targeting teachers with accents, but allowing for individual school districts to do so if they elected to do so (Leeman, 2012).

Another court case that demonstrated the consequences of incomplete linguistic knowledge is that of Hyppolite v. State in 1996 (Rodman, 2002). Larry Hyppolite was a Haitian born national who was charged with selling cocaine in Indiana. A key piece of evidence in the case was an audio recording of the transaction between the seller and the buyer. The voice in the recording was described as having no accent. Hyppolite, who spoke with a foreign accent typical of a Kreyol speaker, did not match the voice in the audio recording. The prosecutor proceeded to convince the jury otherwise by using flawed and incorrect linguistic logic, asserting that as a second language learner (he could speak 5 languages), he had the ability to change his accent at will, and he was deceiving the jury by using a foreign accent. Hyppolite was convicted to serve 20 years in prison. In his appeal, a linguist named Robert Rodman analyzes the recording used in the evidence with samples of Hyppolite's recorded court testimony and concluded that they did not match. In his report, he also remarked on the various ways that the prosecution had

perpetuated linguistic misinformation. But his appeal failed once again. The appellate judges dismissed Rodman's testimony partially out of skepticism of the robustness of linguistic science, and then denied Hyppolite's appeal based on a lack of sufficient evidence. This case demonstrates how in both the trials and the appeal, poor knowledge of linguistic scholarship and science exacerbated the consequences of stigma for an L2 speaker.

Robust research in the area of foreign accents in the courtroom is limited. One study sought to compare the effects of foreign accent and standard accent in the courtroom (Frumkin, 2007). 174 participants were recruited to listed and evaluate recorded witness testimony. Recordings were divided into 6 conditions: Mexican accent versus standard accent, German accent versus standard accent, and Lebanese accent versus standard accent. Additionally, each pair was accompanied with a picture of a person resembling the ethnicity associated with the foreign accent. Participants were asked to evaluate whether the testimonies were credible, accurate, deceptive, or prestigious. They were also asked whether they believed the defendant was guilty, and if so, what the punishment should be. The results found no significant differences between any of the standard accent conditions with the three ethnic appearances alone. But the standard accent conditions were all rated more positively than the accented conditions, which were perceived more negatively in all 3 conditions. There was also a difference in credibility among the three accented conditions, with German being rated the most credible, followed by Mexican, with Lebanese being rated the least credible.

Finally, research into the effects of foreign accent in the education domain have shown that students with accents are held in lower regard by other students, and teachers receive lower scores on judgements of their suitability and their ability to teach effectively. An early study by Callen *et al* (1983) investigated Australian high school students' perceptions of their peers

depending on their accents. The study recruited 48 Anglo Australian participants and 49 Greek-Australian high-school participants. They listened to three passages recorded by speakers with both standard Australian accents and Greek accents. The passages represented three different contexts: school, home, and a bus stop conversation. Participants were asked to evaluate the speakers based on status and solidarity. Results found that Greek accented speakers were evaluated negatively in status by both Greek and Anglo Australians. Notably, when distinguishing between the three contexts, Anglo-Australians rated Greek accents less favorably in all contexts, while Greek-Australians rated Greek accents less favorably in the home and school context only. Greek-accented speakers saw the lowest favorability in the school context by both Anglo-Australian and Greek-Australian participants. Additionally, Greek female participants gave significantly less favorable status evaluations than all other participants to the Greek-accented passage in the school context. Researchers concluded that their results demonstrate how upwardly mobile ethnic minority groups favor a standard accent, particularly in formal settings like school. They also confirmed, as other research has, that the majority group was less favorable to foreign accents in those settings.

Another study examined perceptions of foreign-born teachers who were teaching in Swedish classrooms (Boyd, 2003). The study recruited 54 Swedish principles and teacher-trainers to judge video clips of 5 teachers with foreign accents in the classroom. The participants were instructed to evaluate the teachers in the clips based on pedagogical skill, language proficiency and teacher suitability. Results showed that the teacher who scored the highest rating for accent also scored the highest rating for teacher suitability. Results also showed that while participants were able to accurately judge degrees of accented-ness in the teachers, they were not able to accurately judge the degree of grammatical mistakes. Teachers who made no mistakes

were judged more negatively than teachers who made a few mistakes, and some teachers were judged more harshly despite making the same number of mistakes as teachers who received positive judgements. The participants were also unable to accurately judge degrees of lexical richness in the teachers, as the teacher who scored the best actually varied her vocabulary the least out of all the teachers. The researcher concluded that the participants were using accent, a single aspect of language proficiency, to pass judgement on all other aspects of a teacher's language proficiency and teacher suitability as well.

In a follow up to this study, the researcher organized an informal discussion with both young and adult aged students regarding their attitudes towards their experiences with foreign accented teachers (Boyd, 2003). Students reported that most problems students encountered with a foreign teacher were perceived to be due to their proficiency in the Swedish language. Students were also concerned that teachers with foreign accents would be bullied by students. Additionally, a separate informal discussion was organized with principles, in order to investigate their attitudes. Principles expressed doubts about teachers' abilities to handle situations with limited language skills. One principle shared their concern that these teachers were more likely to "fall back on old habits from authoritarian school environments in their countries of origin" (p. 293).

Sanchez and Khan (2016) designed a study to investigate the effect of foreign accent on students' perceptions of teacher quality in online programming classes. The study recruited 110 native English-speaking undergraduate students with no previous experience in programming. They were assigned to one of two conditions: the first condition had an instructional video that contained narration with no accent. The second condition contained the same video with a Chinese accented narration. The videos explained how to create a simple animation using an

educational programming tool called Scratch. A pretest was done to measure participants' attitudes toward online instruction and the difficulty of programming. A posttest was done to evaluate how well participants learned the information, and to assess attitudes again. Results showed that participants in both groups were equally adepts at understanding the programming tool, with no significant difference between the groups' learning. But perceptions of ease in understanding the instructor, as well as perceptions of teacher quality had significant differences. The accented group rated teacher quality lower and rated the ease of understanding lower as well. The researchers concluded that even though the two groups did not learn differently, they judged their instructors differently based on foreign accent.

One final study used a critical ethnography methodology to investigate experiences of discrimination against immigrant teachers in Canada (Schmidt, 2010). The researcher recruited 43 participants who were either immigrant teachers or other relevant representatives, such as teacher mentors, immigration representatives, school hiring personnel, Ethnocultural organization representatives, or other service providers for immigrant teachers. The study examined 3 phenomena: a.) the experiences and perspectives of immigrant teachers, b.) provincial education stakeholders' perceptions the issues affecting immigrant teachers and c.) the extent to which systemic influences play a role (or not) in immigrant teachers' integration. The results found that accent discrimination, and discrimination based on traits like dress, perceived foreign-ness, and immigrant status frequently occurred in schools where teachers were employed or doing practicum and in educational course that they attended. Some teacher experiences included being publicly humiliated for mispronouncing words, even in bilingual schools. Teachers reported concern that their treatment by peers would be projected onto immigrant students in the same classrooms. Stakeholders reported that, regarding employment, there was an

awareness that teachers with accents would see their chances of employment limited. A representative from an ethnocultural organization claimed that immigrants were the lowest recruitment priority for the teaching field. The researcher concluded that, in general, traits perceived as foreign became obstacles for immigrant teachers to begin or resume their careers in Canada, even when qualifications were not an issue- indeed, some of the teachers interviewed were better qualified than many 1st year Canadian graduates.

To summarize, both regional and foreign accents can pose critical obstacles for speakers to successfully and fairly navigate their way through societies. Research has roundly shown that in legal, business, and educational contexts, speakers who do not speak in standard accents are seen as less competent, trustworthy, or hirable. Their language skills are rated worse, even when those conclusions are not supported by objective evidence. Additionally, laws in the United States struggle to protect accented speakers from discrimination, leaving them uniquely vulnerable to civil rights abuses. Ignorance of linguistic science can lead to exploitation of these vulnerabilities, resulting in discriminatory hiring policies and unfair legal results. The evidence is strong that speakers with non-standard accents could face many uphill battles in their pursuit of success.

Effects of foreign accent outside of target language communities.

While the importance of pronunciation, and its propensity to mark L2 speakers is evident in the second language context, L2 pronunciation in a foreign language context has a different, though no less complex relationship with its speakers. Foreign language context refers to any context where a second language is used outside of the regions where it is the principal language. In the case of English, where non-native speakers outnumber native speakers globally (Ethnologue, 2019), more L2 speakers use the language in a foreign language context than in a second language context. Both groups outnumber native speakers. Therefore, the majority of

English speakers use the language in a context with two important characteristics: a.) the speakers are likely non-native, and b.) their conversation partners are also likely non-native.

This means that the conventions and standards of native English speakers do not matter to this group of speakers theoretically. Therefore, having a non-native accent should not mark speakers as outsiders, or as individuals of lower status. Studies of English as a lingua franca (ELF) have sought to bring these issues into the forefront by highlighting non-native speakers of English and their use of the language in a foreign context. Scholars interested in ELF seek to understand how dichotomous hierarchies of inner-circle countries (countries that speak English natively), versus outer circle countries (countries that speak English as a secondary language) (Krachu, 1990) are broken down. Crystal observed that a majority of English speakers use English as an L2 to communicate with each other as a lingua franca; native-English speakers are in the minority of all global English speakers (as cited in Si, 2019 p. 116). Scholars in this field therefore argue that ELF speakers have no benefit to gain from achieving nativelike speech in the English language. Because they are unlikely to be interacting with native speakers of English most of the time, there is little reason to be concerned about their perceptions or societal expectations (Si, 2019). If an immigrant living in Canada is concerned that the sound of her English will limit her opportunities to participate in society (Norton, 2000), this same concern will be inconsequential to international conference attendees, mainly from different parts of Asia, when using English as their common language (Wen, 2016). Advocates also make a similar argument about the relevance of teaching native-English speaking cultures to ELF speakers when these speakers may have no intention of operating within these cultures (Wen, 2016). The relevance of culture is particularly significant because, as Moyer reviews in her research, a

certain desire and admiration for an L2 culture may be a factor related to the achievement of nativelike L2 (Moyer, 2017).

Yet even in EFL contexts, or in contexts where English is being taught as a foreign language, there exists a well-documented problem where native-teachers are valued over non-native teachers in both hiring and perceptions of teacher competence (Ponce, Lengeling & Mora-Pablo, 2017). Ruecker and Ives (2015) analyzed the advertisements of 59 English teacher recruitment websites, including global recruitment sites, and sites specific to regions such as Taiwan, Korea, Japan, and China. They found that 81% of the sites expressed a requirement for native teachers from a specific block of native English-speaking nations with large Caucasian populations. Some sites discouraged applicants from India, where English is the primary language of Education, or the Philippines, where English is spoken widely as a second or bilingual language. In this analysis, being a native speaker appeared to be more important for applicants than having a degree in a teaching related field or having any previous experience. Thus, while it is widely accepted that nativelikeness is not a necessary standard for competence in L2, stigmas exist even in ELF contexts that privilege native or nativelikeness over non-native individuals in ways that have tangible consequences.

Studies that have investigated the treatment of non-native teachers, in both EFL and ESL settings, have revealed that non-native teachers with qualifications report being discriminated against, and being treated as expendable versus their native speaking peers. In Mexico, a study of 43 TESOL teachers with more than 10 years of teaching experience showed that 76.7% of the teachers reported experiencing discrimination for a variety of reasons, including being non-native English teachers and for having non-native pronunciation. (Ponce, Lengeling & Mora-Pablo, 2017). Ramjattan studied the attitudes of English learners at a private language school in

Canada and learned that students appeared to place more value on white male teachers who were native speakers than they did on nonwhite, female, and non-native teachers in the same school (2019).

Thus, hierarchies based on pronunciation, native, and non-native speech are still observed even in foreign language contexts. Regions around the world still place a premium on nativelike speech, even though it is not a reliable predictor of total attainment or proficiency in a second language. This issue is particularly relevant for non-native English teachers, whose expertise and training are often secondary characteristics when competing with native or nativelike English teachers. The influence that pronunciation has in the lives of language learners across the world further justifies the importance of understanding how pronunciation is developed.

Factors that Influence the Acquisition of Nativelike Pronunciation

Critical period hypothesis.

In order to account for the differences in success for second language learning, researchers have attempted to deduce the factors that lead to such vast differences in results. First-language learning tends to result in complete and stable acquisition of grammar, syntax, vocabulary, and pronunciation, culminating into full proficiency for all of its speakers. In contrast, second-language learning results in far less consistent success. The inherent complexity in human mechanisms for learning combined with (necessarily) limited methods for human research have stymied researchers from fully identifying or explaining the reasons for this outcome. Research thus far has supported the findings that both first and second language acquisition can be influenced by developmental disorders, and various constraints on syntactic, morphological, and phonological features (Moyer, 2014). But individual differences, such as age,

aptitude, environment, and motivation appear to bear an important influence in ways that are much more difficult to narrow and isolate.

Eric Lenneberg coined the critical period hypothesis (CPH) in 1967 in an attempt to generate a hypothesis that was both empirically grounded and could begin to identify a universal influence that might moderate or constrain language learning, and thus bring us closer to an explanation of the variability. This hypothesis, which claims that the learning potential for *all language* is limited by age (specifically after puberty) has influenced research in first and second language learning since its generation. It has formed the basis for volumes of confirmational research as well as research that seeks to explore alternative explanations of language acquisition variability.

As can be read in his *Biological Foundations of Language* (1967), the context of Lenneberg's hypothesis involved his observations of children and adults who suffered a reduction in language abilities after sustaining injuries to the left hemisphere of the brain. Lenneberg observed that subjects under 10 years old experienced a highly successful linguistic recovery. But after an age which correlates to puberty, lateralizatio*n*-the assigning of functions to the left or right hemisphere of the brain- appeared to be complete, and subjects struggled to recover after this age. Thus, the reduction of brain versatility, or plasticity, as one ages, became Lenneberg's explanation for the brain's limitation to adapt languages as time progresses.

Although it focused on first-language acquisition, Lenneberg's critical period hypothesis spawns a wealth of questions about second language acquisition. The most direct one is whether biology maintains the strongest influence over the variability of acquisition. Similarly, the CPH raises questions about the role of other factors in affecting the variability of acquisition, such as input, environment, motivation, or skill. It also presents an essentialist challenge: that if there

exists a learner who learned after the critical period yet managed to achieve nativelike levels of proficiency, then the critical period hypothesis, in its purest form, cannot survive (Moyer, 2014).

Fundamental Difference Hypothesis.

Robert Bley-Vroman approaches the differences between L1 and L2 acquisition by positing that the processes of second-language learning deserve special consideration from researchers. In *The Logical Problem of Language Learning* (1989), he identified the fundamental differences that inarguably distinguish second language acquisition from first language acquisition, including a lack of universal success, general failure, resulting variation in progress and strategy, variation in goals, the correlation of age and proficiency, the phenomenon of fossilization, indeterminate intuitions- or the lacking of clear grammaticality judgments from even advanced speakers, the importance of instruction, and the roll of affective factors. Bley-Vroman argues that the existence of variation in SLA end states, the necessity for language instruction and the influence of goals and motivation is evidence that SLA differs from first-language acquisition, which typically results in full acquisition under any condition.

Bley-Vroman also argues that adults' possession of a complete first language system, combined with general problem-solving skills, is frequently leveraged to achieve successful results in adult language learning, even if it is not comparable to younger learners. Knowledge of a language system gives adult learners an intuition about what expectations to have about other languages. Learners, for example, should expect languages to include nouns, verbs, Boolean connecters, the ability to ask questions, among other features. The learner's first language provides a substitute, though incomplete, model for the universal grammar that children have access to.

Bley-Vroman also discusses how general problem-solving skills possessed by adults help adult learners achieve second language acquisition. He posits that the lost features of universal

grammar are balanced by the cognitive ability to process feedback, set, and achieve goals, understand explanations, form, and test hypotheses. These problem-solving abilities give adults powerful tools to take on abstract systems of language, though less efficiently than the subconscious acquisition of universal grammar.

Thus, Bley-Vroman presents his case for why this Fundamental Difference Hypothesis provides the most logical and supported theory for the variation between adults and children in language acquisition. He addresses why other prominent theories in the field don't provide adequate explanation of the variation. He argues that the L1 interference hypothesis, which charges that L1 knowledge impedes on L2 acquisition, is inadequate because it relies on obsolete behaviorist categorizations of language, and it contradicts empirical evidence that language interference is the cause for a very low percentage of learner errors. The input hypothesis, or the idea that successful acquisition is benefited by exposure to lots of language, is complicated by the fact that adults fail to become nativelike even after years of being in an L2 environment. Bley-Vroman acknowledges that variables described in the affect hypothesis, such as motivation, attitude, socialization, do give evidence of a difference between adult and child learning. But he also points out that this theory relies on imperfect assumptions about child learning, for example that all children have equal amounts of self-esteem or motivation. Finally, the competing cognitive systems hypothesis, which argues that adult problem-solving skills compete and obstruct the mental language learning process, is complicated by two paradoxes: first, it presumes that the worst problem solvers would be the best language learners, when there exists no reasonable evidence to support this. Second, it would assume that the least motivated learners would be successful language learners, when the evidence shows that the opposite is true.

With his Fundamental Difference Hypothesis, Bley-Vroman concludes that while adult language learning is demonstratively different from child language learning, adults should still be expected to be capable of achieving acquisition nearly equal to that of native speakers. However, this goal would more likely be achieved if strategies that focus on adult learning processes are investigated more. This current research into the exceptional pronunciation of adults investigated the role of adult learning strategies versus innate talent in the achievement of nativelike pronunciation in order to provide insight about potential language learning strategies for adults.

Research on Biological Influence of CPH or the FDH.

Historically, it has been difficult to test the Critical Period Hypothesis (CPH) or the Fundamental Difference Hypothesis (FDH) by measuring the brain directly. The procedures that this would require are exceedingly dangerous, and far beyond the acceptable risk of harm to research participants. Some researchers like Marian Diamond (2001) experimented on the brains of rats (requiring their euthanization), and her research concluded that time and age, even with extreme deprivation, did not limit the animal from achieving normal levels of cognitive development. Since then, advances in research technology have allowed new and safe ways to observe language development in the brain. Using Magnetic Resonance Imaging (MRI), scientists were able to measure brain function in language users without the need for invasive procedures, providing important opportunities to test for age-related and critical-period effects. Using neuroimaging techniques such as Positron Emission Topography (PET) and functional magnetic resonance imaging (fMRI), scientists have found evidence that a.) brain activity differs between L1 use and L2 use, supporting the fundamental difference hypothesis (Schafer & Constable, 2009) and b.) that age may not be the most influential constraint on second language acquisition (Perani *et al,* 1998; Schafer & Constable, 2009).

Studies that have examined Event-Related Potentials (ERP) in the minds of language learners have been particularly groundbreaking in the insight they have acquired about brain activity during first and second language use. ERPs are detected when the brain experiences specific events or actions related to language use. These actions have been found to generate their own unique ERPs. For example, if a reader detects an incorrect lexical/vocabulary item in a cloze activity, this will trigger an ERP signal called an N400. When Morphosyntactic or grammatical errors are detected, the brain emits two ERP signals: a P600 signal and a left anterior negativity (LAN) signal. Finally, when a listener detects a phonological deviation in language, a mismatched negativity (MMN) signal is generated (Steinhaugher, 2014). Using these ERPs, researchers have found new and more accurate ways to compare the cognitive capabilities of native language speakers and adult second language learners.

Initial research using ERPs appeared to support the CPH's claims that ultimate attainment in L2 is constrained by biology. A seminal study examining morpho-syntactic ERP signals in L2 learners was conducted by Weber-Fox and Neville (1996). They compared Korean and Chinese learners of English to native speakers and found that a.) only learners with an age of arrival (AoA) of 2 years had LAN signals that resembled native speakers, and that b.) learners who started learning after the age of 16 failed to generate a P600 signal. In other words, most of the L2 learners did not resemble their native-speaking counterparts at all. The authors concluded that this result was evidence that late learners did not have access to the same syntactic processes as early learners, in line with the CPH.

Hahne and Friederici (2001) and Hahne (2001) attempted to expand the previous study's findings with morphosyntactic ERP studies into late L2 learners of German. These studies resulted in P600 signals being generated in some late learners, however none of the participants

generated LAN signals. From this the authors concluded that L2 learners rely on different mental processes than native speakers, adding support to the CPH and the FDH. These studies have been frequently cited as evidence to back up arguments for differences in L2 learning (Steinhauer, 2014).

However, Steinhauer (2014) observed that methodological problems may have confounded the conclusions that these studies presented. Mainly, he noted that the researchers' methodology failed to distinguish AoA from L2 proficiency. The researchers had failed to control for proficiency in order to determine with certainty that the AoA was the variable most responsible for variance in ERP signals. Similar methodological problems had been observed in PET investigations on bilingualism that also supported the CPH (Perani *et al*, 1998). The problem with these examples is that it is impossible to determine whether the variance is determined by differences in proficiency or differences in AoA.

More recent ERP research that includes proper controls does not support the CPH. Friederici *et al* (2002) conducted a study that employed an artificial language, called *Brocanto*, to measure ERP signals while also controlling for proficiency and exposure. Using computer programs, participants learned to comprehend and talk in *Brocanto*, and were tested by playing a board game that required them to utilize the language. Once participants achieved higher than 90% accuracy in the language, the participants had their ERP responses measured while listening to grammatical and ungrammatical sentences in *Brocanto*. Results showed that the learners generated the same LAN and P600 signals that are viewed as nativelike responses. Another ERP study that controlled for L2 proficiency was conducted by Rossi *et al* (2006). Their study examined Italian late-learners of German and German late-learners of Italian and included both high proficiency and low proficiency learners. The results of this study showed that the high

proficiency learners generated the same LAN-P600 signal combination that matches native speakers, while the low proficiency learners only showed a P600, even when matched on AoA with higher proficiency learners. The finding of these studies suggest that the previous studies' reports of non-native like ERPs in their participants should be attributed to a lower proficiency level rather than AoA (Steinhaugher, 2014). Furthermore, it appears that higher proficiency learners match native speakers in terms of brain activity. Subsequent research in this area has added support to this notion (see Steinhaugher, 2014 for a review). Birdsong (2018) also noted that findings of nativelikeness can vary depending on the structures investigated and the native speakers that are serving as the control.

Thus, even sophisticated scientific investigations into biological constraints of language learning have failed to produce consistent and uniform evidence that language acquisition is naturally limited by age and biology, though there is some evidence that the processes may change. Subsequent research has interrogated the notion of the maturational factor in language acquisition. In their review, Singleton & Ryan (2004) identified five takeaways that research has generated:

> 1). L2 learners whose exposure begins in childhood are globally more successful and efficient that older learners.
>
> 2). L2 learners whose exposure to the L2 begins in adolescence/early adulthood are globally more efficient and successful than younger learners.
>
> 3.) L2 learners whose exposure to the L2 begins in childhood are more efficient and successful than older learners only in some respects.

4.) Adolescent/adult L2 learners are initially more efficient, but in the long run the younger a learner is when the L2 acquisition process begins, the more successful the outcome of that process will be.

5.) After a certain maturational point, the L2 learning process changes qualitatively. (Singleton & Ryan, 2004, p. 61)

This section has explored the trajectory of inquiry into the nature of second language acquisition, and the robustness of the critical period hypothesis, which upheld that after a certain point in maturity, people lose their ability to learn languages efficiently and naturally. As research into this question became more sophisticated and advanced, new evidence began to weaken the CPH's influence. Most current research instead supports the Fundamental Difference Hypothesis, which posits that first and second language learning are unique processes, and that second language learning is not limited by biology.

Key questions still remain. If biology does not dictate one's ability to learn a second language, then how strong is its true influence? Also, what are other factors in SLA that may exert influence on success? The next sections investigate research into factors affecting ultimate attainment in a second language.

Studies Evaluating Ultimate Attainment in L2

Ultimate attainment across multiple aspects of language.

Robust amounts of research have been conducted to measure ultimate attainment in L2 in relation to age (Asher & Garcia, 1969; Fledge, 1988; Fledge & Fletcher, 1992; Oyama, 1976; Patkowski, 1980; Seliger, Krashen & Ladefoged, 1975; Tahta *et al*, 1981; Thompson, 1991). Studies in ultimate attainment have generally sought to investigate whether an L2 learner could achieve nativelike acquisition across the totality of language domains, which include phonology,

grammar, and morphology. Ultimate attainment studies also include large amounts of learners with a diverse range of age of onset (AO) times. In the areas of grammar, morphology and syntax, studies have shown generally negative correlations between age of onset and ultimate attainment. Even so, the role of age in these results has not been conclusively decided, and researchers point out that a lack of an obvious drop off point disputes the certainty of maturational constraints. Birdsong argues that if maturational constraints provided a conclusive explanation, then the age at which declines in ultimate attainment are observed would be far more consistent, and that AO would not be the strongest predictor of end state ultimate attainment (2004). Some studies identified L2 learners that scored in line with native speakers across many linguistic domains. However, in terms of phonology, these studies have generally shown that L2 learners score significantly differently than L1 speakers, and that the effects are more pronounced as the AO increases. These studies generally use inferential statistics methodologies to derive conclusions to their investigations. The following will summarize notable research in this area.

Several seminal studies have attempted to investigate ultimate attainment in just grammar, with mixed results. Johnson and Newport's (1989) study of 46 Chinese and Korean long-term residents of the U.S. used a grammaticality judgment test (GJT) to investigate significant differences in the rate of AO for their subjects. Their subjects were divided into very early starters (AO= 3-7 years), early starters (AO= 7-15 years), and starters who began after AO=15. They found that very early starters performed like the native speaking control participants, while the early starters demonstrated a strong negative correlation between their AO and their scores on the test. The after AO=15 group showed no statistical correlation between their AO and test performance. This exhibited the logic of the sensitive period, that correlations

between AO and attainment would not be observed after the point of maturation (Johnson & Newport, 1989).

However, when this study was repeated by Birdsong and Molis, using the same procedure but with Spanish speaking subjects, the results were different. Their subjects with AO≤ 16 showed a weak correlation (r = -0.23) while subjects with AO ≥16 showed a strong correlation (r = -0.69). In this study, ultimate attainment correlated with performance well past the supposed age of maturity, contradicting Johnson & Newport's original logic.

Dekeyser, after replicating Johnson and Newport's study with 57 Hungarian speaking subjects and achieving similar conclusions (2000), attempted to execute a more refined study in 2010. Dekeyser also used a grammaticality judgment test in his two studies; the first involved 76 Russian immigrants who were acquiring English in North America, who had a length of residence of at least 8 years. The second study involved 62 Russian immigrants learning Hebrew and living or studying in Israel. Both studies detected a significant negative correlation between age of acquisition and scores on the test. In this study, Dekeyser found that a steep decline was present in his data at around age 12, after which ultimate attainment rates went flat. This outcome aligned with the critical period hypothesis notion that a certain period would have to exist where attainment beyond it becomes flat.

Other studies measuring grammar and morphosyntax have also demonstrated a negative overall correlation between age of onset and ultimate attainment (Flege, Yeni-Komshian, and Liu, 1999; Jia, 1998; Kim, 1993; Shim,1993). Abrahamsson (2012) used both a grammaticality judgment test and measured voice onset time (a measurement of the time between stops on certain consonants) to test the ultimate attainment of his subjects. His subjects were 200 Spanish speaking learners of Swedish, along with 20 native Swedish speaking controls. His subjects were

separated into two groups; the first group consisted of learners with an AO of 1-15 years and the second group consisted of learners with an AO of 16-30 years. The grammar test resulted in a negative correlation between AO and test performance. The results of the voice onset time test showed that no one after the age of 15 scored within the native range, but 9 percent of learners who started earlier scored within the native range.

A more recent study by Hartshorn, Tenenbaum and Pinker (2018) attempted to address the issue of sample sizes by running an ultimate attainment study with a massive data sample of n= 669,498 native and non-native English speakers. Using a grammaticality judgment test that they administered through a website quiz, the researchers accrued a large trove of data to analyze. Their study came to two notable conclusions: the first was that a language learner should be expected to arrive at their end state language acquisition after 30 years of language learning. The second was that they identified an age at with language learning appears to decline: this was after the age of 17, which is beyond puberty and much later than many other researchers had concluded.

Even as the evidence points closer towards a defined period after which nativelike learning cannot be achieved, critics argue that this argument is complicated by the fact bilingual speakers do not resemble monolingual speakers. Therefore, even a fluent bilingual speaker would not resemble a native monolingual speaker, making monolingual nativelikeness a potentially flawed standard to measure the question of a critical or sensitive period (Birdsong, 2018).

Studies into general ultimate attainment have mixed conclusions about the effect of age on most aspects of second language acquisition (morphology, grammar, etc.). However, their findings related to pronunciation consistently show a negative correlation between age and

acquisition and fail to identify successful learners who began their acquisition after the hypothetical sensitive period. This is likely because these studies' methodologies, which recruit widely and with large numbers of participants, focused on the goal of obtaining a representative sample of the L2 population, and less on the goal of identifying learners who could present evidence to reject the critical/sensitive period hypothesis (Hyltenstam & Abrahamsson, 2009). The following section introduces studies with designs that specifically focus on pronunciation and achieve more success in identifying successful late learners.

Ultimate Attainment in L2 Pronunciation.

Studies that were designed to evaluate pronunciation specifically have had more success in identifying successful groups. This is due largely to targeted recruiting; in which subjects were selected either for demonstrated aptitude or were recruited from groups with high skill in language. Although results are mixed, many studies were able to identify learners who showed nativelike proficiency in speaking. The following will summarize research in this area.

A few studies recruited L2 learners identified as successful in accent and attempted to evaluate their skills in other parts of language. Coppieters (1987) evaluated the syntax and accent of highly successful learners of French. The study found that while accent indeed appeared nativelike, their scores on the syntactic judgment test were lower than the control group. Additionally, syntactic errors appeared in the subjects' recorded speech sample that did not appear in the subjects' tests. Coppieters concluded that although his subjects had acquired nativelike accents, they were not yet nativelike semantically.

Hyltenstam and Abrahamsson (2003, 2009) attempted to evaluate accent and phonological, perceptual, grammatical, and lexical skills in a highly successful group of adult L2 learners of Swedish. The investigators first identified a total of 195 L2 speakers of Swedish, who self-identified as advanced speakers and who began acquisition at various ages. The subjects

were divided into two groups: AO= 11 or younger and AO= 12 or older. They elicited speech samples and presented them to 10 native-speaking judges, who were led to believe that they were judging differences in regional Swedish accents. The results indicate that although the subjects demonstrated nativelike accents in informal conversation, they scored below nativelike in their other skills.

Birdsong (1992) was able to identify learners that successfully passed as native when their grammar was tested. In his study, 20 late learners of French who were identified for their nativelike accents were administered a grammaticality judgment test. 15 of these learners performed within the native speaker range, indicating that successful late learners are capable of demonstrating nativelikeness in other aspects of language.

Additionally, some studies identified successful late learners and then set out to scrutinize their pronunciation even more deeply. The aim was to test whether judges would uphold perceptions of their accents if tests were designed to focus on challenging aspects of English pronunciation. Bongaerts *et al* (1997) designed a complex study to test this, which consisted of three groups. Group one was a control group of 5 native speakers of English, group two consisted of 10 highly successful Dutch learners of English, and group three consisted of 12 Dutch students of English at various levels of proficiency. To evaluate the groups, the researchers used a combination of tasks consisting of a spontaneous speech sample and read-alouds of an 84-word English passage, 10 sentences and a 25-word list. A statistical analysis revealed that members of groups one and two were treated like members of the same population- in other words, the highly successful L2 learners were able to pass as native speakers. Later studies conducted by Bongaerts would also show that small subsets of non-native speakers are

able to pass for native speakers based on theirpronunciation (Bongaerts, 1999; Bongaerts, Mennen & Van der Slik, 2000).

A recent study sought to investigate whether cognitive skills or social proximity to native speakers could compensate for the loss of the automatic language acquisition that takes place before the sensitive period (Dollmann, Kogan & Weibmann, 2019). They analyzed the data of 2,037 immigrant youths living in Germany. Using data from a longitudinal survey of children of immigrants in Germany, the investigators measured pronunciation extracted from a read-aloud text activity. The investigators also gathered data for cognitive skills (using a language-free test and a measure of completion for upper secondary school track), and for exposure (using months spent in an intimate relationship with a native speaker, a measure of German use with family and friends, and a measure of the share of people without immigrant backgrounds in the respondent's neighborhood). A multivariate inferential analysis of the data revealed that cognitive scores showed a significant negative relationship with accent. The effect of this relationship was strongest for subjects who immigrated after age 16, but it had no affect for subjects who immigrated before age 10. Exposure to native speakers of German also had an effect on accent; results showed that each month in an intimate relationship with a native partner increased usage of German with family and friends, and unit increase in the share of native speakers in the subject's neighborhood was associated with an overall less pronounced foreign accent. The results lend support to the hypothesis that language learning abilities lost with age can be compensated for by cognitive abilities and by exposure to native language settings.

These studies succeeded in identifying L2 learners who can pass as native speakers. Yet they lack meaningful qualitative data gathering that could provide more insight on the unique characteristics of these exceptional learners. The next section explores tools and techniques used

in research to measure attainment in pronunciation, while the final section of this literature review focuses on a small number of studies that have collected limited qualitative data on learners identified as exceptional.

Measurements of pronunciation attainment.

The various tools used to measure pronunciation in SLA studies have differed depending on the characteristics and constraints of the samples being recruited. This section discusses the use of read-aloud passages, open response/interviews, and methods of evaluation. This investigation focuses on tools that have been used to gather data from English L2 speaking participants from a variety of second language backgrounds.

Read-aloud passages.

Read-aloud passages challenge the participant to read a passage of written words that contain elements of the targeted L2 phonetic system. They have been used in studies that recruited subjects from a variety of backgrounds language (Dollman, Kogan & Weibmann, 2019; Tahta et al, 1981) as well as studies that have recruited from single language backgrounds (Bongaerts et al, 1999; Flege et al, 1995 & 1999; Olson & Samuels, 1973; Snow & Hoefnagel-Hohle, 1977). The length of these passages varies depending on the scope of the study. For example, in Fledge's two studies, the read-aloud passages consisted of 5 short sentences to make manageable the 240 participants (1995). Snow and Hoefnagel-Hohle's study similarly utilized a reading list of 5 different words for their 136 participants. However, for the second part of their study, they increased the list of 80 words for their smaller group of 47 participants (1977). Bongaerts' study of 10 Dutch learners of English utilized 10 sentences and a list of 25 words (1999), while Olson and Samuels used a series of German pronunciation drills for their 60 learners (1973).

Different studies report different outcomes with this tool, largely dependent on the participation of their subjects. For example, Nikolov noted in her study (2000) that her participants appeared uncomfortable with the read-aloud activity and generally performed worse on it than they did on her open response activity. In contrast Dollman, Kogan & Weibmann (2019) noted that the read-aloud activity provided them with the most standardized data. Additionally, they reported that most of their participants successfully completed this activity, whereas some participants refused to answer the open response questions in their study. In these cases, having two tools was advantageous.

Open-response/interviews.

Open-response questions are employed to elicit natural-sounding speech from participants and are lauded for their ability to generate authentic pronunciation data. Researchers often ask participants questions about typical topics, such as language learning history, and the responses are recorded and later played to judges. Because open-response answers are impossible to predict, researchers sacrifice the ability to extract standardized speech data-particularly speech data that includes specific phonemes that may interest the researcher. However, this tool extracts speech data that most resembles how the participants would normally speak, thus adding a dimension of validity to the data that laboratory-designed tools cannot on their own. Researchers utilize this tool when their goal is to acquire naturalistic data versus laboratory data (Snow & Hoefnagel-Hohle, 1977). Researchers who have employed open-response as a tool include Abrahamsson & Hyltenstam (2009), Bongaerts (1999), Coppieters (1987), Ioup *et al* (1994), Nikolov (2000), Snow & Hoefnagel-Hohle (1977), Tahta *et al* (1981), and Thompson (1991), Dollman, Kogan & Weibmann (2019) also employed this tool but decided not to analyze the data, preferring the more standardized data from their read-aloud activity.

Methods of evaluation.

Researchers investigating ultimate attainment in pronunciation favor using native speaking judges to evaluate the nativelikeness of their speech data (Bongaerts *et al*, 1999; Dollman, Kogan & Weibmann, 2019; Flege *et al*, 1995 & 1999; Hyltenstam & Abrahamsson, 2009; Ioup *et al*, 1994; Nikolov, 2000; Olson & Samuels, 1973; Snow & Hoefnagel-Hohle, 1977; Tahta *et al*, 1981; Thompson, 1991). In the majority of the research surveyed, native speaking judges were recruited from outside the investigators' networks, and were linguistically naïve, meaning they have little formal expertise with the rules of language (Abrahamsson & Hyltenstam, 2009; Bongaerts, 1999; Flege e*t al*, 1995, 1999, 2006; Moyer, 1999; Nikolov, 2000). Olson and Samuels (1973) relied on a graduate student in the L2 to serve as one of their two judges, but the researchers hid the nature of their experiment from both judges. Only one researcher, Coppieters, served himself as a judge for his study. He reported that he relied on his training as an oral proficiency rater for ACTFL (1987). This trend was broken by Dollman, Kogan & Weibmann (2019), who used listeners who were specially trained by university phoneticians (but were not themselves linguists or phoneticians).

To evaluate the speech, judges listen to recordings of the data and use rating scales to evaluate levels of nativelikeness (Abrahamsson & Hyltenstam, 2009; Bongaerts, 1999; Flege *et al*, 1995 & 1999; Ioup *et al*, 1994; Nikolov, 2000; Olson & Samuels, 1973; Snow & Hoefnagel-Hohle, 1977; Tahta *et al*, 1981; Thompson, 1991). These scales are typically ordinal scales, with the lowest number assigned to the rating of *not nativelike* to the highest number assigned as *nativelike*. Scales can range from having dichotomous choices, e.g., nativelike or not (Nikolov, 2000), to having 5 choices (Olson & Samuels, 1973; Snow & Hoefnagel-Hohle, 1977), to having 9 choices (Dollman, Kogan & Weibmann, 2019; Southwood & Fledge, 1999). Judges listen to the recordings and mark their judgment on a ratings sheet, occasionally with comments.

Characteristics of Late L2 Learners with Exceptional Ultimate Attainment

The final section of this review focuses on studies that have identified successful late-learners and have attempted to analyze distinctions between their experiences and those of less successful learners. These studies identify successful learners and use limited qualitative data techniques to analyze learners' experiences. No purely qualitative study on the topic was found that could be added to this review. However, seven separate quantitative studies attempted to gather some qualitative data in the form of interviews from cases that were revealed to be exceptional late learners, and these studies were reviewed by Alene Moyer to investigate commonalities in the experience, social orientation, abilities/talents, or metacognitive learning approaches of the learners who succeeded despite a late start (2014). The first study conducted by Ioup *et al* (1994) extensively tested an exceptional learner of Egyptian Arabic, concluding that she had achieved a nativelike status amidst all of the controls. The subject reported having a distinct ear for sounds, and the researchers reported that the subject benefited from a social environment that encouraged her learning. The second study that focused on a successful late learner of Hungarian noted that the learner listened to TV and radio in the target language, and mimicked the speakers (Nikolov, 2000). The third study involved a successful learner of English from Spain, who reported that she consciously restrained herself from speaking in L1, and that she had a special aptitude for languages (Muñoz & Singleton, 2007). In the fourth study, an exceptional learner of German reported listening intently to his German exchange student friends' voices over recordings in order to absorb the sounds of the German language. The subject also reported easily assimilating into German culture while studying abroad (Moyer, 1999). The fifth study involved more exceptional learners of German and reported that the learners described their personalities as extroverted and reported being very focused on the goal of sounding native (Molnar, 2010). In the sixth study, which focuses on an exceptional learner of

Brazilian Portuguese, the case in focus reported that she paid close attention to pronunciation and linguistic cues, and that she had adopted a Brazilian identity (Major, 1993). Finally, the seventh study, which focused on another exceptional learner of German, reported that the subject also had a distinct goal to sound like a native speaker, and her techniques included mimicking the nativelike phonetic sounds of German, and also to maximize her practice despite having a limited network in Germany (Moyer, as cited in Moyer, 2014).

Moyer's analysis of the qualitative data presented in the aforementioned studies revealed commonalities in the cognitive psychological and experiential profiles of the successful late learners. Nearly all learners reported using metacognitive approaches, like self-monitoring, to aid their phonetic acquisition, while several of them reported having a special aptitude for sounds. Psychological similarities included a strong identification with the L2, self-reported outgoing personalities, and a distinct desire to sound native. Regarding experiential similarities, all learners reported using English across multiple domains, including in the home, at work, and in social situations (Moyer, 2014). Moyer herself concluded that a combination of cognitive flexibility and strong motivation were factors that lead towards nativelike phonetic attainment.

Subsequent research was carried out to further explore Moyer's findings, that linked successful L2 Pronunciation to usage in multiple domains, aspirational belonging to an L2 community (Moyer, 2017), and awareness of pronunciation significance. One study of note, conducted by John Levis (2015), managed to obtain interesting insights regarding the viewpoints of learners who were not successful. His phenomenological study followed 12 graduate L2 students in STEM fields who were invited to take part in tutoring for pronunciation in a university course. These participants had been struggling to improve their L2 accents. The students were interviewed about their experiences having foreign accents, with particular interest

in the ways in which they viewed the impact of pronunciation on their personal or professional trajectories and on their goals for pronunciation and how they may be achieved.

Levis identified 4 consistent themes from the participant's experiences that contrasted sharply with Moyer's profile of a successful L2 learner (2015). For starters, participants did not express any meaningful connection to pronunciation and their personal lives. While they were aware that their pronunciation may be holding them back professionally, pronunciation did not appear to have any value or meaning within their personal or social connections. To these learners, quotes Levis, "Pronunciation is seen as a tool, not a way to socially interact beyond very basic needs" (Levis, 2015, p. 50). This was also reflected in their use of L2; it was almost never used at home or elsewhere except to socialize with their few L2 contacts. In contrast, Moyer (2014) observed that successful L2 learners opted to use the L2 in as many domains as they possibly could and had many L2 contacts.

Additionally, Levis's participants all expressed a desire to pass as a native speaker but did not actively seek opportunities for personal and social communication in L2 networks. They also possessed a belief that a native speaking teacher would enable them to catch native speaking pronunciation but still dismissed the importance of seeking out other native speaking communicators. Their strongly utilitarian view of pronunciation is plainly at odds with Moyer's concept that pronunciation is tied significantly to identity, and the learners' relationship with the L2 language and community (Moyer, 2014).

Moyer herself recently reexamined her conclusions and built upon them to advocate using the concept of autonomy as a framework for understanding the choices of L2 learners who achieved nativelike pronunciation (2017). She acknowledged that recent trends in brain-imaging research have disputed the explanation of biological limits of ultimate attainment to the point

where researchers must begin to ask different questions about how pronunciation is attained. Some of those questions include a.) how does the learner engage with pronunciation, and b.) what is their orientation toward investment in the L2? By beginning to investigate learner agency, particularly the influences that inform both their choices and limitations towards pronunciation acquisition, more complete insight can be gained into how advanced learners achieve nativelike pronunciation despite learning as adults.

Summary

In summary, the discussion of these concepts highlights the need for more qualitative, cohesive data into adult ultimate attainment in SLA, specifically in the area of pronunciation. As demonstrated, pronunciation and accent have tangible and powerful consequences for speakers who are trying to navigate society. Perceptions of accent can affect speakers' abilities to access economic mobility, educational resources, and it can affect how they are treated in the legal system. This is true for people with both regional and foreign accents who are trying to navigate the society that they live in. But it is also true of second language speakers who must communicate with other second language speakers. Accents carry strong, though untrue, connotations of intelligence, prestige, and achievement, so much that EFL teachers are discriminated against in their own countries due to their foreign accent, often being passed over for teaching jobs that they are qualified for. This is despite the fact that most researchers disagree that one's accent is a significant mark of one's capabilities with language.

Because accents can have such pronounced consequences on the success of individuals, it is imperative that research robustly investigates what lies at the root of differences in attainment. A large and exhaustive body of quantitative research has determined that most language learners who start learning young are likely to achieve nativelike acquisition in pronunciation, whereas

learners who start learning as adults are far more unlikely to do so. Given that this reality is heavily supported, it is still far less clear why this difference exists. For a long period of time, researchers subscribed to the hypothesis that our language learning abilities stop working due to biological changes after puberty. This notion, though once difficult to investigate through science, has lost much of its credibility as advancements in research have produced evidence to the contrary. The current consensus, that child language learning and adult language learning are two different processes, diverges from the absolutist notion that language learning abilities are fixed after a certain age. Instead, this consensus behooves future research to investigate what factors create the conditions for successful adult acquisition of second language pronunciation.

Qualitative investigations have made progress in this area to a point. Those published focus on single subjects with successful pronunciation, often that were identified in a study focused on something else. This has led to gaps in research where no group of successful learners have been examined consistently and cohesively. There has yet to be an investigation of multiple learners with a systematic and cohesive methodology that is employed across all cases. The current research set out to investigate such individuals using a qualitative style approach. It collected data consistently and systematically from screened participants using a semi-structured interview protocol- including a uniform set of interview questions. By employing a systematic method of data collection and analysis across all sample participants, the current study aimed to provide a more robust and trustworthy analysis on characteristics that can be observed in successful late learners of the English language. In Chapter 3, the methodology of this study is described in detail.

CHAPTER THREE: METHODOLOGY

Purpose of Study

This study employed a qualitative phenomenology framework to investigate the factors that lead to exceptional acquisition of second language pronunciation in speakers who began learning as adults. This study sought to gain insight that moves beyond notions of biological limitations and further the inquiry into other explanations for pronunciation outcomes. Given the growing consensus that there is a fundamental difference in language learning between adolescents and adults, research must gain a more sophisticated understanding of the factors that lead to successful adult acquisition of pronunciation. Such an understanding will have implications for how people teach, learn, and think about the process of second language learning.

Research Question

1. What self-perceived factors influence the ultimate attainment in pronunciation for adult L2 learners (late)?

The current study employed a qualitative methodology and was designed as a phenomenology. The objective of this design was to observe a unique and rare experience shared by a group of special individuals. This methodology involved analyzing interview data about participants' experiences and synthesizing a rich description of a unique phenomenon.

A phenomenology is a type of qualitative investigation in which a unique experience, shared by a group of people share, is analyzed in order to pinpoint its axiomatic characteristics. To that end, a phenomenological study contains the following elements: a specific concept in focus, a group of individuals who have experienced the concept, interviews, and data analysis

(Creswell, 2018, p. 130). In this case, the concept of focus was the attainment of nativelike pronunciation in a second language. The individuals recruited were language learners who began learning as adults. After these individuals were recruited, interviews were conducted with them, followed by a qualitative data analysis to unearth an understanding of their attainment.

Investigations covered in the literature provided the model to recruit and test successful L2 learners, and to identify learners that have obtained nativelike pronunciation. Tools that were employed to identify these L2 learners included a learner questionnaire, and L2 rater procedures. These will be explained further in upcoming sections of this paper. Additionally, this study sought to affirm the findings of previous literature, which showed that exceptional late learners across several studies demonstrated a "constellation" of different traits that allowed them to achieve a nativelike accent. This study used a phenomenological approach to investigate if some or all of the traits previously identified can explain the nativelike pronunciation of its participants. These traits include *self-described talent, metacognitive approach to learning, pride in L2 attainment (intrinsic motivation) strongly identifies with L2 (integrative motivation), desire to sound native, socially outgoing [personality] and L2 use across multiple domains* (Moyer, 2014 p. 425). These previous findings were built upon by investigating the traits of presently recruited late-learners who were selected and studied in *the same case study protocol*, rather than several disparate studies by different researchers.

Research Design

This investigation was conducted using phenomenology as research framework and case study as design. In this model, data was collected asynchronously from multiple subjects who were screened to meet the criteria of a successful late learner of a second language (Cohen, Manion & Morrison, 2011). This case study was primarily descriptive, in that it provided a

narrative account of successful L2 learning using thick description. However, it was also partially explanatory, in that its results were compared to the findings of research in this field. In choosing this methodology, the principal investigator aimed to acquire and analyze data that contributed to an expansion of our understanding of L2 learning for adults: chiefly, to observe how learner variables influence or contribute to achievement.

Participants

The participants in this study were a purposeful sample of individuals who speak English as a second language and who are non-native speakers of English. These individuals demonstrated nativelike phonetic attainment and all of them began their critical exposure to the English language after the age of puberty (starting at age 12 for this study). Non-native speakers are defined as learners who did not acquire the target language (English) simultaneously with their native language (i.e., were not raised as bilingual speakers), and were not required to produce the language until their adulthood experiences in formal instruction/exposure. This is to clarify for individuals who may have been exposed to English as children, as this represents a large mass of potential participants due to the globalization of the English language. In order to successfully recruit this purposeful sample, a screening process was conducted as part of recruitment procedures. This process is outlined in the participant recruitmen*t* step of the Procedures section, and it produced 2 participants who would become the focus of this study. The profiles of these two participants are shared in the following section.

Participant Profiles

Lisa

Lisa was born and raised in Nanchung, China, and she grew up speaking Mandarin Chinese. Lisa began learning English in middle school, or at around 11 or 12 years old, which she described as typical for Chinese children of her generation. Before that point, she knew her ABCs, and she reported knowing simple vocabulary- approximately 20 words. During her middle school English lessons, she began to learn common English greetings and phrases. She described her education at this stage as no different from the rigor of Chinese middle school students.

Lisa enjoyed learning English and was able to grasp the concepts easily. English appealed to her as a subject that was fun and did not require a lot of effort to achieve. Lisa described times when her mother asked her to go do homework, and so Lisa would read an English text out loud in order to placate her. For Lisa, English was considered the low stress subject that she moderately excelled at in school, as opposed to mathematics and science.

Lisa attended high school at a Foreign Language Specialty school, which acquired the designation because it hosted two foreign teachers for language training. Lisa continued to study English at this high school, but it was often in classrooms with many students, and Lisa reported not receiving a lot of speaking practice. She recalled an experience at her high school graduation that made her aware of her underdeveloped speaking skill. She attempted to converse with her teacher about a mountain in China to which the teacher would depart for a vacation soon. Lisa intended to tell her teacher that her father had returned from the mountain, and it was a beautiful place. However, Lisa struggled to form the words and sentences to express this, even as the teacher tried to help. Lisa left this encounter feeling very frustrated. She reflected that by the end

of high school, despite acquiring approximately 3000 English words and having some reading comprehension and writing ability, she lacked the ability at the point to apply those skills in speaking conversation.

Lisa next set out to attend University. Her and her family decided that Lisa would pursue an education in Chinese education. To graduate with this degree, it would be required for Lisa to demonstrate proficiency in a second language, though it was not the primary objective. Lisa therefore spent the majority of her time during this period focusing on activities to enhance her prospects as a Chinese teacher, including writing poetry, language competitions and being a Chinese tutor. Lisa did not spend time pursuing activities with students studying English, such as extracurricular English clubs. However, Lisa soon began Chinese tutoring for English speaking students, and through this she rekindled her interest in developing her English skills. Her successes in using English to interact with her students boosted her connection to the language and attached a new purpose to it. Additionally, Chinese tutoring led Lisa to make connections with many English speakers at her university. She began to spend time with them socially and gained more opportunities to hear and use the English language. Although Lisa still primarily conducted her life in Mandarin during this period, Lisa described this as a turning point.

Later, Lisa acquired an opportunity to study a graduate degree at a University in Australia. Lisa describes this development as being the first existential goal in her life that motivated her to consciously improve her English skills. Lisa wanted to score well on the IELTS test, a test of English proficiency required for studying at some Universities. Therefore, she started a regimen of self-study, and focused acutely on preparing for the speaking portion of the exam. Lisa's result on the IELTS speaking exam was on the highest end of the scale, which

surprised Lisa and, for the first time, brought to her conscious the actual potential of her English Language ability.

Lisa's exceptional IELTS score brought her an opportunity to teach at a prestigious language school in China, which she did during the gap between graduation and the start of graduate school. This was Lisa's first time as an English teacher, and through teaching she gained even more awareness and confidence in her ability. Lisa also explained that the prestigious nature of the school increased the stakes for her to appear as a professional and talented English language specialist. She mentioned being particularly conscious of her image, including her clothes and shoes, because she wanted to project an image of someone with experience. This pressure motivated her to focus on improving her grammar and speaking skills, though not so much her pronunciation at this point. Lisa reported paying attention particularly to British English at this time, due to the focus on IELTS in her school.

Lisa's next turning point was when she moved to Australia to pursue her graduate degree. Once in Australia, Lisa reported that she started to dream in English, and she started to think in English even when she was by herself. Lisa also started to become interested in how people speak, and she started to become more conscious of different types of accents. The accent spoken in Australia was relatively new to her, and she immediately started to compare it qualitatively to British and American accents, with which she had familiarity from her studies and her teaching. She also started focusing on what she described as consistent pronunciation. Lisa explained that, due to her exposure of English materials from a variety of regional backgrounds, her pronunciation contained a mix of multiple regional influences. In Australia, she set about self-correcting for a pronunciation system more consistent with her surroundings. She worked so that

eventually her Australian accent produced all of the appropriate regional sounds in Australia, and she eventually did the same with her American accent.

When Lisa returned to China, her environment from that contained English as a primary feature. She taught as a lecturer in the English department at a local university, where she delivered all of her lessons in English, prepared Lessons for translation students, and she prepared competition students for the national English-speaking contest. She reported having much success in this field. She also began dating an English speaker, to whom she would eventually get married. She thus began speaking English in her home.

When Lisa was asked about techniques that she used to practice pronunciation, Lisa talked about numerous practices. These included choosing English TV shows that focused on topics relevant to her. She mentioned avoiding popular shows like ‘Friends” because to Lisa the language was not interesting and the humor was not understandable, and she did not find it productive for learning. She preferred reality shows, particularly singing contests, because she understood the topics and language, and Lisa believed that the more natural elements in the show, like exclamations, were more useful practice than scripted sitcoms. She would watch these shows and practice the language that she observed while watching. Lisa also mentioned sorting pronunciation differences into categories of *regional accent* and *areas for personal improvement*. She was able to make this hierarchal distinction once her English detection abilities increased in proficiency. When Lisa decided to target a pronunciation issue for personal improvement, she described a very systematic process. First, she targeted the sound with minimal pair activities. Next, she practiced activities that intentionally forced her to integrate those sounds into her natural speech. Lisa explained that it was imperative to extend isolated pronunciation practices into making sentences and to eventually incorporate them into the linguistic fluency system.

When Lisa was in Australia, she also paid attention to the different ways that Australians pronounce words, such as the word ‘Hello’, and she slowly used her practice system to incorporate these sounds as well. Lisa also focused on intonation, a tendency that she gained from studying for IELTS, which emphasized intonation in its speaking evaluation.

When Lisa was asked if nativelike pronunciation is important, she responded that, as a teacher, she believed it was not important because it is neither realistic nor necessary. She also believed that it could be counterproductive because it could discourage students who struggled to attain it when it was a trivial goal. Lisa believed that students should pursue pronunciation primarily for intelligibility, however if they felt that native like pronunciation was interesting and would improve confidence, then students should have the opportunity pursue it if they wished.

Lisa also expressed awareness of the potential for discrimination based on accent, and also that she may have escaped this by having nativelike pronunciation, although she was not explicitly aware of specific circumstances. She speculated that this could include receiving certain opportunities that others may have been excluded from or being generally treated like a local or insider in the USA, and not regarded as someone who was in reality a very recent immigrant from China.

When Lisa was asked if pronunciation was an important part of her identity, she responded that early on in her life, it was very casually related. However, due to the progression of her career as an English teacher and from encouragement due to positive feedback, it was an important part of her conception of her personal capabilities. Even though Lisa identified as a non-native speaker of English, her nativelike accent had become a part of her self-image as a skill that she exceled at. She also considered her interest in regional accents and assimilating them a part of her identity. She compared it to being associated as a skilled musical instrument

player, in that it was a skill that she constantly refined and became one small part of the sum that she could offer to the world. Lisa also stated that she viewed her abilities as a gift, or a sign that she had a special aptitude that allowed her to succeed.

Claire

Claire was born in Marrakech Morocco. She became interested in English at the age of 12 and explained that her mother sparked the interest when she took Claire to an American language center to find an extra-curricular activity. Claire described the classes as fun with no grades and very low stakes, an enjoyable after-school activity. Claire reported learning a lot from the classes despite this. She recalled that the classes were fairly low tech; they utilized a textbook and audio that the teacher played in class. The classes contained a mix of grammar, short readings and writing. Claire expressed that she enjoyed the classes because the language was "fun, interesting and exotic". She especially liked the lessons about culture. She participated in them for 2 years, until she lost interest and preferred to spend time with her friends during evenings instead. Claire was 14 years old by the time she stopped.

Also during this period, Claire visited the USA, when she was 13 years old. Claire visited Disney World in Orlando, Florida on a family trip. Although she did not speak much English on the trip, she recalled hearing and seeing English everywhere, including on the TV and at the theme park, and she encountered people who were friendly and nice. For her, this experience was exciting, and she reflected that this experience made English something real and no longer abstract. She recalled that although she was too shy to speak at the time, she saw the utility of going somewhere new and communicating with someone in English. Claire believes this probably motivated her through her final year at the American Language Center.

Once Claire's classes at the American Language Center ended, she enrolled in English classes in high school. However, these classes did not challenge Claire. The lessons were basic and covered things that Claire mostly was familiar with, after her two years at the American Language Center. Claire speculated that by this time she possibly knew more English than her teachers did. She reported not learning anything knew in these classes, and that she viewed them as an easy A.

During college, Claire did not focus on English language at all. At her college in Morocco, classes were conducted exclusively in French; and she did not pursue any English language classes or activities. She reported having no classmates to speak with or many reasons to use the English language at all during this time. Although Claire did practice English at this point, she did claim that her English language proficiency was about 85% developed by this point.

Eventually, Claire had planned a move to the United States, which she said was inspired partially by her previous experience there and also her desire for a better life. When she moved to the USA, she started working right away, and describes her English usage as accelerating from 0 to 100. Claire spoke English every day at work, and for every activity that she had to complete. She made acquaintances from work whom she would occasionally meet, and she would speak English with them as well. At home, with her husband at the time who was from Morocco, she spoke a mix of English and Arabic. She estimated that starting from this period she spoke English 90% of the time in her daily life.

When Claire was asked to describe her motivations for learning English, she reflected that at first, when she was young and had the opportunity to study at the American Language center, she was excited to learn a cool and exotic language and culture. She also reported that her

trip to the USA at 13 years old may have influenced her as well. Claire mentioned having a preference for the North American accent because to her, it was interesting. She was not attracted to United Kingdom or European accents of the British language. Claire mentioned that compliments and positive feedback from her language abilities also motivated her and boosted her self-esteem, even though she didn't actively focus a lot of her effort into learning the English language. Particularly regarding pronunciation, Claire denied that she consciously tried or even cared to focus on this skill and claimed that it just developed over time.

When asked about the importance of English pronunciation, Claire responded that in her opinion, it was important for people learning English to aim for understandability. Claire mentioned that she enjoyed hearing different accents of speakers with different first languages, and that she believed it added a lot to the world, and that it was beautiful. Claire also reflected on a student of hers who struggled with pronunciation in English, and Claire speculated that having a nativelike accent may make It easier to do certain things, like getting a job, or making certain kinds of friends, or avoiding discrimination from people hostile to foreigners. But Claire did not believe that this was an important reason to aim for a nativelike accent, and she believed that the variety of accents were a valuable part of the world.

When asked if she believed English was an important part of her identity, Claire speculated that maybe growing up, it was, because as one read, learned and was inspired by things in English, one may internalize those things over time. When asked if French and Arabic played a role in her identity, she said that in her formative years they played a much stronger part, but these days she estimated that they both represented half, while English represented the other half.

Table 1;
Self-reported participant demographic data

	Lisa	Claire
Native Language	Mandarin Chinese	Arabic
Other Languages spoken	N/A	French
Age first exposed to English instruction	11 (almost 12)	12
Age of immersive English exposure	21	23
Total years of formal instruction	15.5	5
Total years of immersion/exposure	6	21
Age	32	44

Notes: Obtained from subject questionnaire (*See appendix C*).

Procedure

To recruit these two participants, this study followed three major steps for its procedure: a.) participant recruitment, b.) data collection, and c.) data analysis. The following section will describe each step in detail.

Participant Recruitment.

Participants were recruited using purposeful sampling, which involves selecting individuals based on characteristics that can purposely inform the central phenomenon of the study (Creswell, 2016). Recruitment efforts included advertising on social media networks, especially towards groups dedicated to linguistics (such as Omniglot Fan Club of Facebook or the Orlando Language Exchange). Recruitment methods also included flyer distribution across local area universities and relied on snowball sampling by way of recommendations from individuals interested in the research. While the nature of this research can be applied to speakers of all languages, this study only recruited participants who are learners of the North American

dialect(s) of English as a second language. This decision was meant to minimize the number of resources and personnel that were required to scrutinize the nativelikeness of the participants' second language pronunciation.

A screening evaluation for ultimate attainment was conducted with recruited participants in order to screen them for eligibility. To be deemed eligible, participants were required to be 18 years or older and they must be judged as having high or nativelike pronunciation in their second language. This evaluation also collected critical demographic data that included the speaker's first language and the age at which the speaker reportedly began receiving ample exposure to English language and instruction. Any participants who reported being exposed *critically* to English before the age of 12 were excluded. This data was collected via an adapted questionnaire and distributed as a Google form survey (Moyer, 2014).

The adapted questionnaire surveyed the following factors:

Biological age at first immersion and instruction (people who began before age 12 were excluded from the final part of the study).

Exposure.

Instruction in pronunciation.

Motivation.

Psychological/affective factors.

Additionally, participants were asked to perform a task that was recorded and reviewed by native speaking judges. The task required them to recite an authentic English language passage which contained a complete set of English language phonetics (Nikolov, 2000). The passage, titled *The Tiger and the Mouse* was created and validated by the Learning Prosody in a Foreign Language (LeaP) project (Gut, 2004). It can be viewed in Appendix B below. There was no time limit set on this activity and this activity was conducted in one-on-on sessions in private

settings. These procedures were conducted over Zoom video conferencing technology to minimize the risk to the health and safety of participants and the researcher. This technology was also used to create recordings of the speech samples. These samples were combined into a sound file containing 10 speech samples; these samples also included 2 native speaker samples for control. These recording samples were then evaluated by native speaking judges who were recruited for this study.

Participants that were identified by judges as having nativelike pronunciation were then selected to participate in the next stage of the study. This study successfully recruited N =2 participants into the data collection stage.

Native speaking judges.

Judges were recruited to evaluate the records for nativelikeness. They were recruited via purposively from the researcher's professional network. The three judges recruited were individuals without special expertise in second language learning, and who had North American English confirmed as their first language. The judges were blinded from the identities of the participants, and any judge who was found to have a connection with a participant was disqualified. The recording samples were presented to the native speaking judges who were then asked to give a confidence rating on the nativelikeness of each sample. Participants that are identified by judges as having nativelike pronunciation were then selected to participate in the next stage of the study. The native speaking raters used a rating guide adapted from Moyer (1999), which asks whether or not the subject is a native speaker of English; yes or no (Moyer, 1999 p. 87). This rating guide also included a space to write comments.

Table 2;
Judge Rating Sheet

	Is this a native speaker?	
Speaker		
1	Yes	No
2	Yes	No
3	Yes	No
4	Yes	No
5	Yes	No
6	Yes	No
7	Yes	No
8	Yes	No

Data Collection

For the data collection stage, semi-structured interviews were conducted. All interviews were conducted over Zoom. Interviews were recorded with platform embedded tools to allow for later transcription. Interviews were conducted for no more than 90 minutes and were guided by a protocol designed to address the research question (*see Table 2)*. This protocol focused on four initial areas of interest. Additional insights gained from the interviews were included in the analysis as well. These interviews were audio recorded, and later transcribed into text-based files using the transcription software Trint. Both recordings and transcriptions were stored on an encrypted, external hard drive. This hard drive was stored in a secure, locked file cabinet located in the researcher's office. An additional backup file of both recordings and transcriptions was stored on a separate hard drive, which was stored in a separate location from the primary hard drive. Recruitment and data collection both began upon IRB approval. Informed consent forms were emailed to every participant recruited, and the researched received recorded verbal assent to

voluntary participation for each participant. No screening session or interview occurred without the informed and voluntary consent of the participant.

Table 3;
Interview Protocol

Data	Question	Prompts & elicitations
To get some background info	Tell me a little about yourself	Age at which you started to learn English
Techniques for practicing pronunciation	Can you recall ways that you learned and practiced pronunciation of English?	What else?
	List all of the ways you remember learning English (school, movies, books, friends, etc)	
Motivations	Describe your motivations for learning English.	Any more reasons?
	Describe your motivations for focusing on pronunciation.	
	Describe the people and places where you use English frequently. For example, at home, at work, with friends?	
Attitudes	Describe how you feel about the importance of English Pronunciation and sounding like a native speaker.	
	Would you describe English as an important part of your identity or not very important?	
Member checking	*interviewer went through all answers provided*	Anything missed?
Notes		

Data Analysis

Interview transcripts were analyzed for themes to address the research questions of the study. To protect the identity of participants, all transcripts that were analyzed in the data analysis stage were assigned an alias. To format the data for analysis, text-based transcriptions from interviews were used to produce a thick description for each case. Both the thick description and the transcribed interviews were analyzed for consistent statements about the experience of gaining exceptional L2 pronunciation that emerged across participants. These statements were then grouped into large units called themes. Themes that emerged were used to describe the essence of this experience, which lead to a greater understanding of factors that contributed to participants' attainment in pronunciation.

This study followed this preliminary structure of a phenomenological data analysis. These steps included:

1. A disclosure from the PI of experiences and biases with the phenomenon. This included experiences with language learning, language teaching and educational experiences that may influence perceptions of data.
2. A development of a list of significant statements derived from the interview data. These statements were derived from the interview data and captured how interviewees experienced the phenomenon and. The PI developed this list to minimize overlap or repetition, and each statement captured was treated with equal value.
3. A grouping of statements into broader units, which became themes. These thematic units consolidated the data to provide the foundation for interpretation and deep analysis.

4. Textural description of the phenomenon as described by the participants. This description took the form of a narrative description that describes what happened to the interviewees, based on the answers they provided in the interview.
5. A structural description of the environment in which participants experience the phenomenon. This description illustrated the contexts in which participants were able to experience the phenomenon. Given that participants are likely to have diverse lived experiences, this description highlighted the environmental factors that participants had in common, both physical and contextual.
6. A combination of the textural and structural description. This section described the essence of the phenomenon and took the form of a long paragraph. It answered 'what' the participants experienced and 'how' they experienced it. (Creswell, 2018).

The final analysis process may have evolved due to the emergent nature of the data analyzed, as is common in qualitative investigations. The section titled *Description of analysis process* fully details the finalized data analysis process.

Table 3 summarize the order of procedures for conducting this study:

Table 4;
Study Summary

Study Phases	Phase details
a) Participant Recruitment	• Purposeful sampling of potential participants from language learning communities; successfully recruited *N* = 2 participants. • All potential participants must report the English immersion learning began after age 12. • Pronunciation screening process collected vocal samples of potential

Study Phases	Phase details
	participants reading a paragraph titled *The Tiger and The Mouse.* • Recording samples were evaluated by native speaker judges. • Samples that are evaluated with high scores on the nativelike evaluation tool were used to select participants for the data collection phase.
b) Data collection	• Participants screened for exceptional pronunciation had data collected from them. • 90-minute interviews were conducted following an interview protocol designed around research questions. • Questions will focus on background info, techniques for learning pronunciation, motivation, and attitude. • Interviews were recorded and transcribed for the data analysis phase.
c) Data Analysis	• Interview transcriptions were used to produce a thick description. • Both the interviews and the thick description were analyzed for consistent statements across cases. • These consistent cases were grouped into larger meaning units called themes. • These themes were used to describe the essence of the phenomenon of language learners acquiring exceptional pronunciation as adults.

Description of the Analysis Process

The findings presented in this section were based on data gathered from 2 interviews. The researcher recruited 19 participants, obtained vocal samples from 18, and after the conclusion of

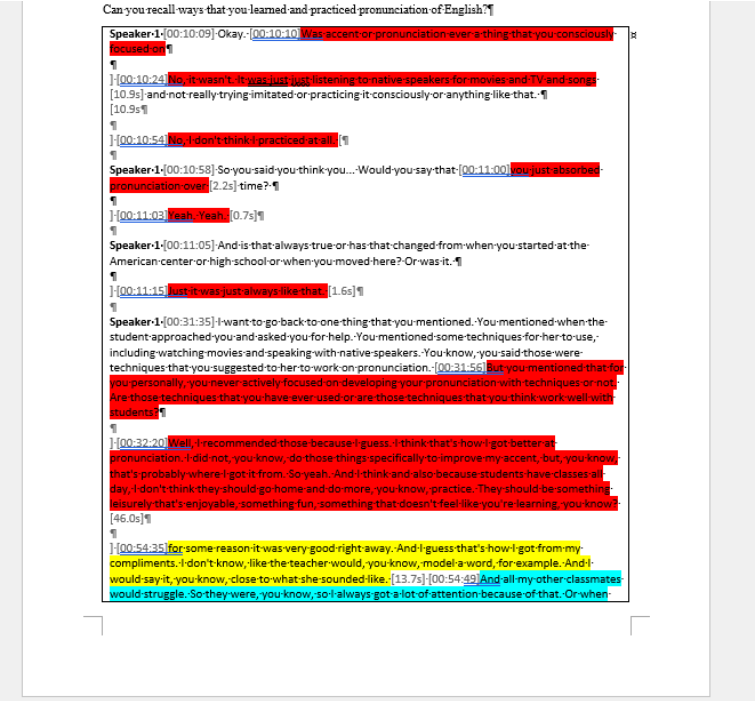
the screening process, two participants passed as nativelike speakers. Both participants were marked as native like by all 3 judges, and judges successfully identified the native controls in each screening.

To collect interview data for analysis, zoom meetings were arranged with these two participants. A recording feature was enabled in zoom to record both the video and the sound files separately. Participants were asked to locate themselves in a room free of sonic interference to make the transcription process easier. Each interview lasted for roughly 90 minutes and was conducted using the questions from the interview protocol. Upon conclusion, the researcher conducted a member checking by giving a summary of the interview based on research notes and on the researcher's understanding. Each participant was then asked to confirm the researcher's understanding, or to clarify information that was missing or misunderstood. Any clarification was marked in the researcher's notes and included in the recording.

Once the interviews were concluded, the researcher retrieved the sound file of each interview from the cloud and saved it onto an encrypted hard drive. Each sound file was then uploaded to a transcription program called Trint. This program generated an automatic transcription for each interview. The researcher reread each transcription 3 to 5 times while listening to the recording and edited any minor errors. To protect the identity of the participants, aliases were assigned; the participant in interview 1 was assigned the alias *Lisa,* and the participant in interview 2 was assigned the alias *Claire.*

In order to provide a description of the phenomenon and the environment, a narrative thick description of each interview was created. These thick descriptions contain an essential summary of the experience described by each participant. These descriptions can be viewed in the *Participant Profiles* section of Chapter 3.

In order to identify essential statements, the researcher employed a two-step coding process. In the first step, the researcher created a word document for each interview transcript. Tables were generated within these word documents, and the tables were divided based on interview questions from the interview protocol. The transcripts were then analyzed for statements that provided direct or indirect answers to each question. These statements were sorted into the appropriate table cell matching the relevant questions. The statements were then analyzed together using color codes, and then grouped together as larger units to conceptualize initial themes. These conceptual themes were recorded as comments on each word document in preparation for the second step of coding.


Can you recall ways that you learned and practiced pronunciation of English?¶

Speaker 1: [00:10:09] Okay. [00:10:10] Was accent or pronunciation ever a thing that you consciously focused on¶

¶

] [00:10:24] No, it wasn't. It was just just listening to native speakers for movies and TV and songs [10.9s] and not really trying imitated or practicing it consciously or anything like that. ¶ [10.9s¶

¶

] [00:10:54] No, I don't think I practiced at all. [¶

¶

Speaker 1: [00:10:58] So you said you think you... Would you say that [00:11:00] you just absorbed pronunciation over [2.2s] time? ¶

¶

] [00:11:03] Yeah. Yeah. [0.7s]¶

¶

Speaker 1: [00:11:05] And is that always true or has that changed from when you started at the American center or high school or when you moved here? Or was it. ¶

¶

] [00:11:15] Just it was just always like that. [1.6s]¶

¶

Speaker 1: [00:31:35] I want to go back to one thing that you mentioned. You mentioned when the student approached you and asked you for help. You mentioned some techniques for her to use, including watching movies and speaking with native speakers. You know, you said those were techniques that you suggested to her to work on pronunciation. [00:31:56] But you mentioned that for you personally, you never actively focused on developing your pronunciation with techniques or not. Are those techniques that you have ever used or are those techniques that you think work well with students? ¶

¶

] [00:32:20] Well, I recommended those because I guess I think that's how I got better at pronunciation. I did not, you know, do those things specifically to improve my accent, but, you know, that's probably where I got it from. So yeah. And I think and also because students have classes all day, I don't think they should go home and do more, you know, practice. They should be something leisurely that's enjoyable, something fun, something that doesn't feel like you're learning, you know? [46.0s]¶

¶

] [00:54:35] for some reason it was very good right away. And I guess that's how I got from my compliments. I don't know, like the teacher would, you know, model a word, for example. And I would say it, you know, close to what she sounded like. [13.7s] [00:54:49] And all my other classmates would struggle. So they were, you know, so I always got a lot of attention because of that. Or when

Figure 1: Word Document Tables for Data Analysis

Next, a second round of coding was performed on the statements sorted in the first step. This round of coding utilized an open-source qualitative coding software called Taguette.

Utilizing this software, statements that were related were tagged under another round of specific codes, which were expanded into overarching themes. Themes with large overlap were consolidated.

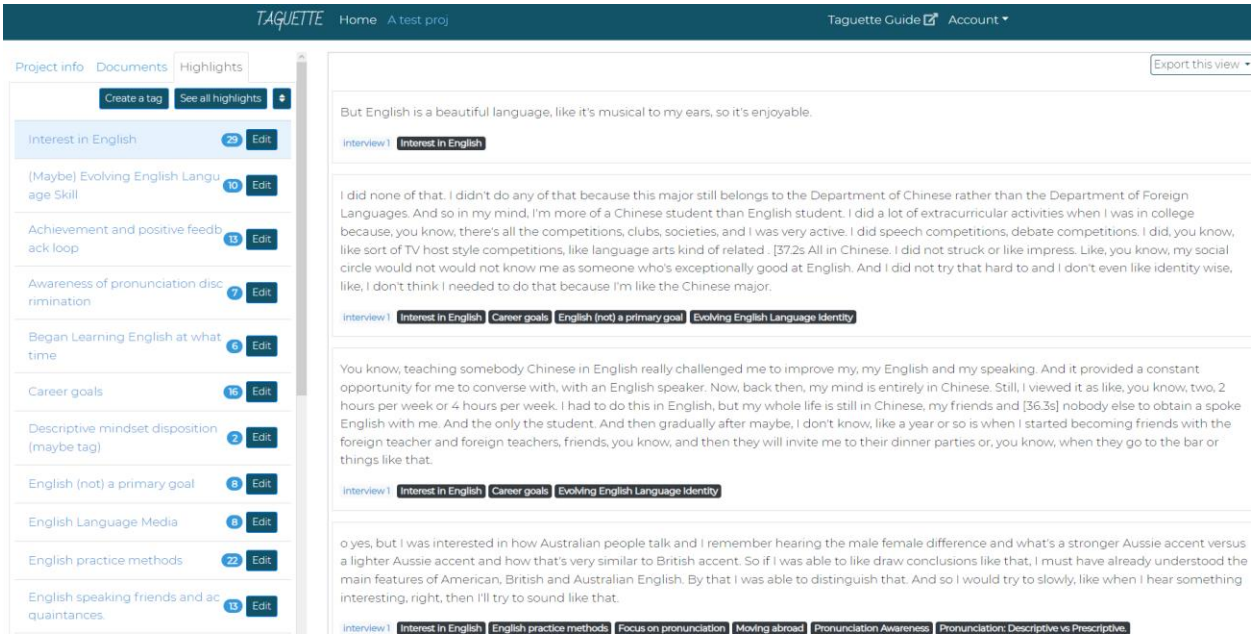


Figure 2: Taguette Online Interface

Trustworthiness

As the primary investigator, I must disclose positional biases that may affect the interpretation of the data. I am a native speaker of English who has not gained mastery of a second language to the degree that my study participants have. It is also likely that my study participants have been living in a foreign country for a long period of time, which is also an experience that I lack going into this research. As such, there may be elements of the participant's testimony that I will not understand or will take for granted in my analysis. To avoid these issues from threatening the trustworthiness of the study, a full disclosure of PI

experience was included in chapter 3, and strategies were described that are intended to aid in corroborating the data and analyses:

The study conducted member-checking with each interview participant directly after the interview was completed. This was intended to confirm that the researcher's interpretation of the interview data matches that of the participants (Creswell, 2018). In addition, participants were contacted during the data analysis stage to give ongoing confirmation of the emergent findings. Finally, this study was unable to locate an external auditor with experience in advanced multilingualism and living abroad, in order to provide an external audit of the available data and analysis to corroborate the primary investigators findings. Nevertheless, the primary investigator is confident that other measures taken adequately maintain the trustworthiness of the study.

Additionally, evidence from the interviews were triangulated with data from the initial questionnaires. By cross checking interview data with the data gained from the initial questionnaires, the PI were able to confirm the appropriateness of interpretations and of the codes that were generated during the analysis stage.

To ensure the transferability of this study, a thick description was included for every interview. This description described the settings and medium for each interview. It also described the answers and narrative given by each participant as well as the nuances of the conversation, such as pauses, hesitations, or changes in topic.

CHAPTER FOUR: FINDINGS

This chapter presents the findings from the analysis of 2 semi-structured interviews along with survey data. Major themes that emerged from the collected data and related to the research questions are presented. Finally, a summary of the findings is presented at the end of this chapter.

Themes

This investigation sought to understand what self-perceived factors lead to exceptional attainment of pronunciation for late learners of L2. The interviews conducted with Lisa and Claire generated 4 overarching themes related to this experience. This section analyzed, discussed, and consolidated the experiences described within these themes in order to present an image of an overarching experience for these two learners. This section discusses themes, which are divided into units illustrating the essence of the experience for the participants. These units are referred to as dimensions. Within each theme, some dimensions describe convergent experiences (experiences that are shared by both participants), while other dimensions describe divergent experiences (experiences that manifested differently for both participants).

Theme 1: Interest in English Beyond Instrumental Purposes

A central theme in the narrative for both Lisa and Claire was their interest in learning English for the sake of curiosity and fun, but not as a primary goal for school or for a career until later stages of their lives. Although the nature of their education differed initially -Lisa began learning English in a formal classroom setting in China while Claire began learning at an informal language center in Morocco- both participants approached the subject of English as a

recreational endeavor. In this theme, all dimensions described largely overlapping experiences for both participants. The primary dimensions identified within this theme included: a.) discovery of interest in the English language, b.) English is not a primary objective, c.) independent choice (norm determined) of materials based on Interest, d.) using English as cover for achievement e.) articulation of attraction to specific English features.

Convergent dimensions

Discovery of Interest in the English Language.

Both Lisa and Claire reported finding English to be an interesting and enjoyable subject early into their learning. Lisa described her early realization in grade school that English was one of the subjects that she found success in, which led her to enjoy focusing on it over other subjects:

> And I do realize that I tend to have more talent in terms of language subjects. I usually score really well in terms of like Chinese and English without a lot of my effort. Whereas for the science related subjects, I have to like try harder or just like accept the fact that I'll never be as competitive as some other students. So English learning English in school is never too difficult. It's always sort of a subject that I feel comfortable in, that I feel confident about myself… it's just like easier [sic] and enjoyable subject.

Lisa also clarified that she did not strive for equal achievement in all skills required of the language, but instead favored certain ones that were enjoyable or easy for her:

> I did not enjoy all the grammar drilling and my understanding of grammar knowledge was like early on. I always thought that I was bad at grammar because I can do well in terms of like a reading comprehension I can read through and, you know, do my questions right and I can listen and I can get my questions right. But it's the section like the multiple choice that focus on the grammar rules. And then they always like… Test you on the trickiest rules like the exceptions. And so I never could like score quite high in those in those sections because I, my brain did not like to remember each rule like that. It's always like, does it sound right to me? If it sound right, then I choose that one. And sometimes, you know, like what sounded right to me was not right.

Claire describes her interest in English as developing immediately after signing up for classes after school at an American Language Center. She describes her experience with these classes as very informal and low stakes:

> There was a an American language center in town. And I don't remember how I got interested in learning English at 12. Maybe it was just my mom just pushing me to do something outside of school. So I started taking classes and just immediately became very interested in it…The classes were fun and you know, you weren't graded or anything. It was just kind of like a fun class, but you learned a lot. We had a great textbook, and the class did not have tests or... Or maybe it did. I don't remember. Maybe there was just like a test in the end to go on to the next level that there weren't like quizzes or anything. So there was a good textbook with audio that came with it. We didn't have a disc or anything. It was just audio that the teacher played and there was like a, a mix of grammar and short readings and just writing sentences, nothing major. So it was, it was fun and interesting and exotic. So I was very interested. So I took classes there probably for close to two years. And then I stopped.

During approximately the midpoint of her classes at the language center, Claire described at trip that her family took to the United States of America, and spoke about the impact it had on her English Language learning:

> Vacation. Just for a month. We came here for a month, but we didn't really speak English because I was with family and we were just talking among ourselves. But it was like Disney and the whole thing and the TV in English. And it just…Everything was just so cool. Yeah. So. Yeah, so I had. Had a good experience here from my vacation and people were nice and friendly. And I guess when the opportunity came to come live here, it was something exciting…
>
> It just made it more real. Made it like, you know, a language I could use, even though I was too shy to speak when I was here. But still, I, you know, saw the usefulness of it. Like, you can go somewhere else and communicate using that language. And so when I went back, I was 13, so I still had one more year at the American Language Center. So that probably yeah… Motivated me also.

English is not a Primary Objective.

Yet despite expressing joy at discovering an interest in the English language, Lisa and Claire both explicitly stated that initially, neither had planned to pursue English language as a long-term goal, neither academic nor for a career, beyond what was required of them. Lisa, who

studied to be a Chinese teacher at university, was required to demonstrate adequate proficiency in a second language for her major. She explained how participation in her University's English language activities were not relevant to these goals at the time:

> I didn't do any of that because this major still belongs to the Department of Chinese rather than the Department of Foreign Languages. And so in my mind, I'm more of a Chinese student than English student. I did a lot of extracurricular activities when I was in college because, you know, there's all the competitions, clubs, societies, and I was very active. I did speech competitions, debate competitions. I did, you know, like sort of TV host style competitions, like language arts kind of related . All in Chinese. I did not struck or like impress. Like, you know, my social circle would not know me as someone who's exceptionally good at English. And I did not try that hard to and I don't even like identity wise, like, I don't think I needed to do that because I'm like the Chinese major.

Claire, who majored in business in college, reported that she neither gained nor pursued advance language English skills throughout high school or in college. In college, which was conducted in French, Claire did not enroll in any English courses or participate in any English language activities:

> "I didn't learn anything new in high school, English wise. And then I went to college in Morocco, but that was not in English. I spoke French since I was a child, so my college classes were in French."

Independent Choice of Materials Based on Interest.

Lisa and Claire both describe taking an independent approach to pursuing English language materials for practicing. Both participants sought materials that were more relevant or interesting personally, while ignoring materials that may have been prescribed as more appropriate or more popular tools by other English Language students.

Lisa, who majored in Chinese at University, recalled how her own tastes in English TV shows diverged from the tastes of the English-major students at her university:

> No, [what I was watching was] not what everybody else is watching. Everyone is watching Friends, How I Met Your Mother. Like... Like that Friends is regarded as like the, I don't know, golden material that if you're into English in American culture, you must watch. So it's a very, very established show in China. And I remember my friends who are not even that good at English, and they're like watching it all the time. And they watch it with, you know, the original sound with just the Chinese subtitles. Right. And was like, do you understand it? Because I don't. And they're like, I guess a little bit, you know. So I remember, like, thinking, if you don't understand this show, how can you, like, love it so much?
>
> …but I did like singing, dancing kind of shows. And back then, I think right around I was yeah, right around 2006 is when those reality shows like the like American Idol style show started in China…So I remember watching the American Idol season eight. I remember from there I started watching. So you think you can dance like the dance show? I remember from there starting to watch America's Next Top model. Like the modeling show. And there is a reason why I prefer that show's over. Let's say an American movie or like a, you know, TV show, like friends, because I think it's much easier to understand them.
>
> First of all, I can I get to enjoy watching the performances, which I like. And the English talking part is like not that much. Right. And if there is any, it's pretty predictable. They usually like complement or they talk about the performance or they say it's not working out, you know, things like that. And so it's a pretty easy language to understand. And you see a lot of repetition. And I can feel I can feel like I completely understood the show. And then that was motivating factor versus, you know, I watch friends and you hear those background laughter that's already prerecorded and you're like, Why are they laughing? I have no idea. Like and the humor back then, the humor did not fully kick in. There's definitely no sarcasm in my speech. So it's not that, you know, I'm not advanced that kind of level, humorous sarcasm, anything that's like that came later came maybe around 2013 rather than 2000.

After deciding not to continue classes, Claire described how she continued to pursue practicing English on her own time. She mainly did this by pursuing English language materials that were interesting for her, even if they may not have been considered appropriate:

> So I stopped taking classes, but I was still interested in English. I just didn't like going there, you know, evenings. It was like an evening class. I got tired of going. I just wanted to spend time with friends or chill at home, so I didn't want to take classes anymore, but I just bought English books, just listened to English music, and you know, I would like look up the lyrics and I'm just going to listen and read and just yeah, just did it on my own after that… And then, you know, from my additional readings and I didn't read and I probably did not read age appropriate books. It wasn't it was just things that interested me, even if they were not for my

> age and they weren't really books that were designed to teach you English. They were just books and magazines, things like that that I thought were cool.

Using English as Cover for Achievement.

Upon reaching high school, Lisa and Claire also mentioned relying on their skills in English as a strategy to show achievement in school without having to put in much effort. Lisa describes how she would take advantage of her pronunciation 'talent' to convince her mother that she had adequately studied her schoolwork:

> And I out of everything that I could do with English, let's say, you know, memorizing a vocabulary, doing reading, I don't know, doing listening, practice. One thing that I would always do is I'll take my textbook and I'll go to the kitchen where my mom was cooking and I'll like read out loud the text next to her, because that's, that requires the least of my effort. But English is a beautiful language, like it's musical to my ears, so it's enjoyable. At the same time, my mom enjoys it because she feels like the daughter is practicing English and sounded pretty good, so she has no complaints.

Claire describes her high school English class in Morocco as an opportunity to get an easy mark, due in large part to her extracurricular preparation before high school:

> So after that, my only language classes or my only English language classes were when I got to high school. But then the classes were just very, very basic because I had already had two years of the language and I probably knew more English than my teachers did. So I was kind of just, you know, just passing the time this class that was drawing or whatever. And it was an easy [A] basically.

Articulation of Attraction to Specific English Features.

Finally, Lisa and Claire articulated specific things that attracted them to the English language. Lisa described English as..." a beautiful language, like it's musical to my ears", and later described being very interested in the differences in accents, both English and Chinese:

> I was interested in how Australian people talk and I remember hearing the male female difference and what's a stronger Aussie accent versus a lighter Aussie accent and how that's very similar to British accent. So if I was able to like draw conclusions like that, I must have already understood the main features of American, British and Australian English. By that I was able to distinguish that.

> And so I would try to slowly, like when I hear something interesting, right, then I'll try to sound like that.
>
> The motivation comes from. I would say Innate Interest. Right. And just in general. Like even in Chinese. I like different accent. I like to impersonate some TV characters, or I would try to do some different regional accents. I don't take it too far. It's not like I spend a whole lot of time, but like when it's convenient, when it's easy to pick up, pick up. I do pick up those things without much effort. And then when I do that, it's entertaining for my family and my friends and I just I do that. So the same thing happens in English, right, when I become more familiar with English. So partially just personal interests, personality, innate ability.

Claire also described an attraction to the sounds of English, saying "at first I just liked the way it sounded. Um. And I just enjoyed it". Claire also expressed an interest in culture, and a preference specifically for American culture and materials over British culture and materials:

> I guess I enjoyed... books that had pictures and that... Talked about America, like, you know, things about the culture and the lifestyle. I think that's something I really. I really enjoyed….
>
> … I was never interested or attracted to go into England and I didn't really find the accent particularly attractive. So. So like. And, you know, and when you're in other countries, you know, most of the songs in the movies that you are exposed to come from the U.S. they don't come from England. So England didn't have really any attraction.

Summary

Exploring this theme of Interest in English beyond instrumental purpose reveals overlapping insights about Lisa and Claires' experiences. Both participants discovered a joy and interest with their initial encounters with the English language. For both of them, English language sparked an interest beyond that of other school topics. For Lisa, it revealed a subject that she could perform in confidently and enjoyably, while Claire recalled fond memories of her initial classes and a passion for consuming English language culture.

Additionally, neither subject pursued English as a primary goal; and as a consequence, neither subject followed the same education route of students for whom English was a primary

goal. Both subjects reported selecting different English language materials than their English-focused peers, and they selected these materials based on personal relevance rather than appropriateness or popularity.

Both participants reported occasionally using their English skills to escape doing more rigorous labor during their high school education. Finally, both participants articulated attraction to specific elements of English, such as the sounds of accents or related cultural materials.

Table 5;
Theme 1: Interest in English beyond instrumental purposes

	Convergent Dimensions	**Divergent Dimensions**
	Discovery of interest in the English language.	N/A
	English is not a primary objective.	
	Independent choice of materials based on interest.	
	Using English as a cover for achievement.	
	Articulation of attraction to specific English features.	

Theme 2: English Language Identity

The theme of English language identity was also central to the narrative of Lisa and Claire. Many of their experiences overlap, however both experienced certain dimensions in a unique way compared to the other. The following dimensions were explored: a.) going abroad, b.) achievement and positive feedback loop, c.) career choices and d.) self-perceived talent.

Convergent Dimensions

Influence of Going Abroad.

Both Lisa and Claire reported that moving abroad represented a sea change in the influence of English in their lives, because it suddenly became a primary feature of their everyday life. Lisa and Claire also reported experiences of going abroad temporarily, before moving abroad permanently. Lisa described the change generating a moment where she started dreaming in English, during her first stay abroad for a master's degree:

> Going to Australia is like the first time ever that I constantly have like an English environment where I read, listen, speak, think. I started dreaming in English first time ever when I was in Australia. That is a memorable moment. I was like, why? Why am I dreaming in English? And then I'll caught myself just naturally thinking English rather than Chinese when I'm all by myself. Like when there is nobody else, right? It's just me. I should be thinking English and Chinese. But then I realized I caught myself thinking in English. So that is the first time, first experience having that.

Lisa reported that while living abroad, she felt very motivated to interact with the English-speaking environment, whereas some of her peers were more hesitant. She credited the difference in her attitude partly to her English language skills at the time:

> here was a little bit of adjustment, but I was able to just, just start living like that. Versus other international students who struggled with English. They have more homesickness. They wanted to listen to their whole music. They wanted to only hang out with students from their own countries that they could speak their own language. I did not have that issue. It took a little bit of adjustment, but pretty much like I can live. And interact with all English kind of environment.

Lisa also described her experience moving abroad to the USA later for a PhD program. During this experience, she was able to cultivate many meaningful relationships with native speakers, and she conducted both her academic work and her career all in English:

> I came to the United States in 2016, where now again all of my life is around English, my academic success, performance, writing, publishing, teaching. So I'm English and I started having a much broader social circle in English, I would say.

> So compared to Australia back then, my social circles are students, international students, and now my social circles are much broader because first of all, like I met more professionals than students, right? And I then since then had two different full-time jobs where I've gotten to know people, not just through my husband. Right, but through myself with friends. And that I'll make, you know. So I yeah, I do think that my friends, coworkers, my classmates, my professors in the doctor program, my husband, my son.

Lisa also reported that moving abroad accelerated her focus on pronunciation differences. This was further explored in Theme 4: *Attitudes Towards Pronunciation*.

Claire had previously mentioned that a trip to the USA as a teenager may have positively influenced her motivation for English language learning, in the section titled *Discovery of Interest in the English Language*. But when she moved abroad from Morocco to the USA, Claire reported a major change in the influence of English in her life; it evolved from virtually zero influence to influencing virtually every aspect of her daily life:

> Well, once I moved here, it was just English everywhere. You know, work to, you know, go get groceries just everywhere. Because I didn't have. Well, I was married at the time, so my ex was from Morocco. So at home we spoke a mix of English and Arabic. But. But I didn't have friends from Morocco. So. So. Yeah, I didn't have anybody around me who spoke anything other than English.

Claire reported that she worked full time and spoke only English at her job, and she made acquaintances at work with whom she would occasionally go out with and interact in English:

> I worked full time, so I was speaking English five days a week with coworkers. And then sometimes it would have like, you know, an after work, happy hour or something.

Claire mentioned that her husband at the time was also from Morocco, but she reported that even at home she spoke a mix of English and Arabic. When asked what percentage of the time she spoke English, she said, "at least 90%." Claire also sited her kids when she described how English plays a dominant role in her life today:

> Right now, it's 100% English. I don't have anyone around me who speaks anything else. And unfortunately, my kids only know English, so. So I don't really speak anything else.

Influence of Achievement and Positive Feedback.

Both Lisa and Claire described how feedback from their success, in the form of compliments or achievement in academic evaluations, helped to shape their image of themselves as English speakers. Lisa noted positive marks that she received on the speaking portion of an International English proficiency exam called IELTS, and how this achievement influenced how she saw herself:

> When I started treating that as an academic subject, it gives me confidence in school. It helps me achieve better grades when there is a speaking component in the tests. Right. Because, you know, if you remember, you know, telling you the rubric, if you have a major one accent in the pronunciation column, you simply couldn't score that high. Right? So like having good pronunciation help did help me in getting higher score. So that's a motivation.

Lisa described how this achievement on the IELTS test marked a major turning point for her, as it would lead her to pivot towards a career as an English language teacher. Lisa also described a variety of instances where compliments on her language and pronunciation skills influenced the development of her English language identity. She explained how over time, positive feedback on her pronunciation solidified its role in her construction of an English Language identity.

> Now it became more part of my identity just because I was told so much from people that, oh, you know, like your pronunciation is so good. Or, you know, you sound like you've been to America, like you lived in like you was born and raised in America. Like, you know, I get those comments. So it became part of what I know that I can do, right?
>
> I have this talent in terms of pronunciation and I, I embrace that. And I like now when people say that, I just I nod and I smile and I say thank you. I no longer say, oh, no, no, no. You know, it's not new. It's nothing like I do see that as part of my self and therefore I don't need to be modest about it ? So I think that thought came from me understanding that I have that ability.

In addition, when Lisa was asked in the English language was an important part of her identity, she responded that it was in the sense that it represents what she is capable of:

> I would say like knowing that this is my ability, it would be comparable to knowing that I'm good at music and I played against. It's comparable to that. And then you'll be like, Oh, you know, maybe I should practice more this instrument. Maybe one day I can perform. You know, it's the same thing as like, you realize you're still you realize potential. You, you know, you get some good feedback and result from being capable, right as well. So yeah, I do think the way you put it, it's like a I am aware of that being part of who I am as a skill set, as like something that I know I can do. If I were to describe myself right, I'll describe myself as good at language learning. I'll describe myself as somebody who, you know, achieved a nativelike proficiency. Pronunciation is part of it, right? You know, in English.

Claire also reported that receiving positive feedback deepened her motivation in developing her English Language:

> And I guess that's how I got from my compliments. I don't know, like the teacher would, you know, model a word, for example. And I would say it, you know, close to what she sounded like. And all my other classmates would struggle. So they were, you know, so I always got a lot of attention because of that. Or when she would play an audio, I understood and I answered the questions and they have no idea, you know.
>
> …And I think. Just because I was doing well in class and, you know, getting compliments, it kind of pushed me to continue in it.

Influence of Career Choices.

Lisa and Claire both also explained ways in which career played a role in informing their English language identity. For both of these participants, a career related to a focus in the English language was never the original plan. But later, both participants became degreed and credentialed English instructors. Lisa talked about experiences that led her on this path. In one anecdote, she talked about receiving an opportunity to teach English in China for the first time. Lisa described the pressure she had to perform well:

> I interviewed to be a teaching assistant at the New Oriental School, and I had a very good supervisor who I guess saw potential in me and believed in me, and he

> trained me to be a teacher instead. So I was fourth year student. I was 20 years old, much younger than most of my students at the time had to appear more mature or try to put makeup on and high heels at all times and refused to answer any questions relating to my age at school. And my and I was teaching child's speaking. That was my very first class that I've taught in, like in English, right? Teaching English as a subject. I was like my very first teaching experience and that's the very first course that I was assigned to do. Now, I did do my work. I probably they probably spend about three months just training me. I had to do many, many teaching demos. I had to plan my course like way in advance because it is, like I said, high prestigious school students come into your classroom with high expectations. So it was very, very challenging.

Lisa also describes how her pronunciation ability imbued her with authority and respect from students when she was in this position:

> Pronunciation is definitely one aspect of how I establish my authority or, you know, even just credibility for teaching speaking because it is very true. Like in America, in China, people think that a speaking teacher should have better pronunciation. And if you do have a native, you know, close to native like pronunciation, it helps you establish yourself. Because at that point, all people hear is your beautiful American accent. You sound so good. People can't tell if you have a mistake or grammar mistake. But people hear and your speech is so beautiful and different from theirs and you know, they wonder how you achieve that. So it is helpful and it is something that I, you know, paid attention to.

Also, as alluded to in the *Achievement and Positive Feedback* section, Lisa described receiving a high score on the IELTS test as the moment her pronunciation began to influence her career trajectory. This experience would lead to her English teaching opportunity:

> I was in 19 or 20 years old is when my life started shifting to be more English focused. All of a sudden I switched to be an English teacher, somebody who's good at English. I remember when I received my old score, it blew everybody away because nobody saw me coming like that. I didn't see myself coming like that. I had a very good IELTS score for a first-time child test taker who pretty much just practiced by myself and my speaking score was really high as well compared to everybody who's taken the test, like in my social circle. And that was why I got to assign to teach IELTS speaking in the first place as well.

Claire also describes an indirect path that resulted in her teaching English and getting credentialed to do so. Claire initially worked in retail when she moved to the USA, but began her career as a French teacher:

> I was in retail and, you know, I wanted to make more money, but I never knew I could be a teacher because, you know, in other countries, you have to have a degree in education to be a teacher. And my undergrad was in business. So but then I learned from a coworker that you could do the alternative certification. You know, you just take the exam and you apply with the Department of Education and you could get a job. So I started learning about that. And, you know, French was one of the options. And I thought this would be the easiest thing. You know, I have, you know, native like proficiency in French. So I passed the exam the first time and then a job, you know, presented itself right away. And so that's what I did. And that was an increase in salary, which was nice. Okay. So, I did that for nine years, but then I wanted to do business. No, not a business. I wanted to do a master's degree because you get a pay raise. As a public school teacher, I think it's something like $3,000 more a year if you have a master's. And so I was thinking of, you know what, I could do it in. And I didn't want to do it in French because I just thought that would not open any more doors. Any other doors that would be just the same job, you know, get the pay raise. But that was about it. So when I thought I was, you know, I thought about maybe education, leadership or, I don't know, just do a master's in business like an MBA. But then I thought, Hmm, if I get a master's degree in TESOL, then maybe I could teach in another country one day because I do like to travel. And, and even though like I can't do that now because, you know, I have kids, but it's something that is very attractive to me being able to live in a different country and see maybe European country or an Asian country somewhere. So that's the main reason why I chose TESOL I really did not believe I was, you know, fit to teach English in America. I didn't think I would find a job teaching TESOL because I figured, you know, there's so many Americans that could do that. I, I just thought it's something that would give me a raise at my current job, and I could teach English in another country one day. But then, you know, I found a job teaching ESOL here. And so it worked out.

Self- Perceived Talent.

Finally, both Lisa and Claire attributed their language ability to a self-perceived talent for languages. Both participants also clarified that they believed a combination of talent and interest led them to achieve their outcomes. Lisa described the phenomenon as follows:

> So the motivation comes from. I would say innate interest. Right. And just in general…I like different accents. I like to impersonate some TV characters, or I would try to do some different regional accents. I don't take it too far. It's not like I spend a whole lot of time, but like when it's convenient, when it's easy to pick up, pick up. I do pick up those things without much effort. …So the same thing happens in English, right, when I become more familiar with English. So partially just personal interests, personality, innate ability.

Claire, when asked about her language ability, responded:

> It was just something that from the beginning just came very easily. I would I wouldn't say work hard. I didn't work very hard on it. It's probably a talent combined with interest. But not hard work.

Summary

The influence of people and environment, opportunities for careers and self-perception of ability were all dimensions elicited while investigating Lisa and Claires sense of their growing English language identity. Both subjects reported having their attitudes towards English influenced by people around them, and they often marked milestones in their English language development by recalling specific interactions or people. Both subjects described in detail how their identities as English language speakers changed over time, and these changes were often accompanied by significant interactions or significant people in their lives. Both participants were also influenced by positive feedback that they received on their English abilities, and both believed this positive feedback strengthened their investment in their English Language identities. Neither participant's identity as an English speaker appeared to be *directly* affected by their career trajectory, but they may have been *indirectly* affected as emerging opportunities may have had an influence. Finally, both participants perceived themselves as being talented at second languages and were aware at an early age.

Table 6;
Theme 2: English language identity

Theme 2: English Language Identity	
Convergent Dimensions	**Divergent Dimensions**
Influence of going abroad.	N/A
Influence of achievement and positive feedback.	
Influence of career choices	
Self-perceived talent.	

Theme 3: Approaches to Practicing English

A central theme emerged around the reported ways in which both participants practiced English and maintained their skills. There appeared to be no consistent overlap among the participants regarding the extent in which they employed metacognitive strategies or other techniques in order to develop their English skills. Both participants did share an appreciation for the consumption of English language media, and expressed specific tastes that were developed uniquely for each participant. Both participants also assigned differing degrees of importance to the role of relationships with English speakers in the development of their English language skills. This theme will cover 3 dimensions; a.) English practice Methods, b.) English language media and c.) English-speaking friends and acquaintances.

Divergent Dimensions

Differing Focus in English Practice Methods.

In their discussions about English practice methods, a strong difference emerged in the practices of both Lisa and Claire. Lisa revealed that she relied heavily on metacognitive strategies for learning, while Claire reported virtually no reliance. Lisa described a variety of different techniques that she used, *in particular to target her pronunciation.* One metacognitive strategy that Lisa described was first detecting phonetic differences in the styles of native pronunciation, then focusing on minimal pair differences at first, and then slowly incorporating phonetic practice into sentence level chunks of language.:

> So listening is always the prerequisite to be able to distinguish that there is a difference at all and then to make sense of that difference. And from there, you decide whether you want to change. Right. And in this case, once I start focusing on things to be changed, then I do think I try to isolate to the minimal pair level like, you know, phoneme level differences like the examples that I give you about the are right for a better card. So I'll start thinking about the ah sound. I'll try to pronounce the ah sound until like I can hear myself sounding similar or you know, if not the same. And then I then make sentences or you know, put it into

> words so I'll be like better car cards, carnival, like something like that. And I'll try to make sentences because I realized is that when you're focusing on the pronunciation, almost everybody can improve their pronunciation on that sound. But the moment you go out and speak because your brain capacity is now used for fluency, making sense of the meaning, putting things together, pronunciation gets left out, and then you still sound the same. You still make the same pronunciation mistakes. So I do make sure that I kind of like explored this way of training myself that I needed to extend the practice to making sentences. Like, as if I'm talking to somebody and I'm using this word. So I think that is very unique because not a lot of people do this.

Lisa also discussed awareness of intonation, and the importance of incorporating it into speech practice. Lisa reported that her interest in intonation came from looking up the requirements for the IELTS test speaking section:

> I remember thinking, what is this intonation? And so I learned about it too, to the point where I started teaching about intonation. And of course, because I teach. I need to know what I'm talking about. I need to be able to demonstrate to my students. So I remember certain things like let's say, Oh my goodness, right. I'll just say like, Oh my goodness. Then I would know the definition of, oh my goodness, I wouldn't know the context where it's appropriate to use that. But I'll never say, "Oh my goodness!!

Lisa talked about connecting English intonation with emotions, and how it informed the way she employed intonation:

> So that is when I started living in the language. Right. And then I, it's, it's something because people have emotions, intonation, the origin of intonation comes from the emotions. When you're surprised, that's what you're saying. Are you kidding me. It's not the intonation itself is the emotion that's driving that intonation. And when I started to have emotion in English is when I can deliver that emotion through intonation.

Lisa also described another technique she relied on, which could be referred to as *shadowing*, in when she vocally repeated a vocal excerpt in time with the recording:

> The focused practice is mostly through imitating. Parroting like basically, you know, you choose a good example, you try to sound like that and then you extend that into, you know, your sentence making kind of scale. And then I do a lot of reading out loud, right? I remember saying that I do like shadowing. Shadowing. It's kind of like repeating, except for when you do shadow, you don't pause the recording. So normally when you imitate, you hear a sentence, you pause and you

> repeat that sentence. Shadowing it keeps going. You're like, one step behind the recording. That's a special technique that I was introduced to, and I did do some of that. And up to this day I still teach it to my students because it's a very, very helpful strategy.

Claire, by contrast, did not recall any metacognitive strategies that she used to practice English pronunciation. When asked if she consciously focused on improving her pronunciation, she responded:

> No, it wasn't. It was just listening to native speakers for movies and TV and songs and not really trying imitated or practicing it consciously or anything like that.

When asked if she could recall all the ways that she practiced pronunciation, Claire responded: "no, I don't think I practiced at all."

English Speaking Friends and Acquaintances (Prior to Moving to the Target Language Country).

Lisa's experience diverged from Claires, in that Lisa had interacted regularly with English speakers before she moved permanently to the USA. In contrast, Claire spoke English with nobody outside of her high school class, and from the start of college until she moved to the USA, Claire did not use English to interact with anyone regularly. Lisa reported interacting with English speakers at her university whom she was helping to learn Chinese language, and eventually becoming friends with the foreign teachers at her university:

> You know, teaching somebody Chinese in English really challenged me to improve my, my English and my speaking. And it provided a constant opportunity for me to converse with, with an English speaker… And then gradually after maybe, I don't know, like a year or so is when I started becoming friends with the foreign teacher and foreign teachers, friends, you know, and then they will invite me to their dinner parties or, you know, when they go to the bar or things like that. And I did go a few times and felt relatively comfortable, but I would still be very quiet. I would not be just like interacting with everybody. And I still have things that I just wouldn't understand because they talk very fast.

Lisa also cited forming a relationship with her boyfriend, now husband, as a key influence for the presence of English in her life. Her boyfriend was a native English speaker and so the frequency with which she conducted her life in English grew rapidly:

> And then I started dating my husband back then. Boyfriend. So. He is a English speaker. So. Yeah. We had to talk to each other. We would go on trips with each other and then eventually 2014, we got married and that's when we started. I moved in with him. We started living together. So before that, I was still living with my parents and, you know, mostly Chinese. But it's just. Ratio wise, I did have to speak more English. Whether it's at work or because my boyfriend and then after I married him. Then of course, like I lived with an English speaker. All the daily stuff has to be back in English. You know, when we talk about what to eat and, you know, go shopping or visit somebody. It would be in English…

Claire reported having no English-speaking friends or acquaintances prior to moving to the USA. She reported how, outside of class, she never spoke English with anyone in her social circles:

> [On situations where she used English]: Class was the only place, but never outside with other people or with…All my classmates were Moroccan. And they weren't really my friends. They weren't from my side, they weren't from my school. They were just people I saw two evenings a week.
>
> [On using English in High school]: No, we didn't speak English outside of class.
>
> [On using or practicing English in college]: No Just didn't use it at all.

English Language Use with Children.

Lisa and Claire also diverged in the language they use to interact with their children. Lisa reported that speaks with her son almost exclusively in Chinese as a conscious effort to develop his Chinese language skills:

> The only reason for me to speak Chinese is to help my son maintain his Chinese. So my son is the only person that all on a daily basis still converse in Chinese. And I have to sort of always remind myself to talk to him in English because he speaks English and I speak English all day. And sometimes if we're not careful, if I'm not, like, intentional about maintaining his Chinese by switching to Chinese, we'll just be talking normally in English.

In contrast, Claire reported that she only speaks English with her kids, and that she cannot communicate with her kids in Arabic or French:

> Right now, it's 100% English. I don't have anyone around me who speaks anything else. And unfortunately, my kids only know English... So I don't really speak anything else.

Converging Dimensions

Independent Use of English Language Media.

Both participants reported engaging with different forms of English language media. Lisa expressed a preference for reality TV shows, a taste that she developed in contrast with her peers at university. Lisa preferred reality shows because the format was familiar, and more helpful for practicing English. She also described how she did not enjoy sitcoms due to the difficulty of understanding the humor and foreign concepts such as a laugh track:

> I also started watching more American reality shows. Now those shows are always around…No, it's not what everybody else is watching. Everyone is watching. Friends, how I met your mother. Like. Like that friends is regarded as like the, I don't know, golden material that if you're into English in American culture, you must watch. So it's a very, very established show in China. And I remember my friends who are not even that good at English, and they're like watching it all the time. And they watch it with, you know, the original sound with just the Chinese subtitles. Right. And was like, Do you understand it? Because I don't. And they're like, I guess a little bit, you know. So I remember, like, thinking, if you don't understand this show, how can you, like, love it so much…but I did like singing, dancing kind of shows. And back then, I think right around I was yeah, right around 2006 is when those reality shows like the like American Idol style show started in China. And the first singing show was called Supergirl. It's like singing only female contestants and singing competition. It was like a phenomenon. Like it's like everybody watched that show in China, and it was like the first kind of that genre. And so I realized that I can watch, like, there are American shows like that. So I remember watching the American Idol season eight. I remember from there I started watching. So you think you can dance like the dance show? I remember from there starting to watch America's Next Top model. Like the modeling show. And there is a reason why I prefer that show's over. Let's say an American movie or like a, you know, TV show, like friends, because I think it's much easier to understand them. First of all, I can I get to enjoy watching the performances, which I like. And the English talking part is like not that much. Right. And if there is any, it's pretty predictable. They usually like complement or they talk about the performance or they say it's not working out, you know, things like that. And so it's pretty easy language to

> understand. And you see a lot of repetition. And I can feel I can feel like I completely understood the show. And then that was motivating factor versus, you know, I watch friends and you hear those background laughter that's already prerecorded and you're like, Why are they laughing? I have no idea. Like and the humor back then, the humor did not fully kick in. There's definitely no sarcasm in my speech. So it's not that, you know, I'm not advanced that kind of level, humorous sarcasm, anything that's like that came later came maybe around. 2013. Rather than. 2000. So that's after I lived in Australia.

Claire reported reading books and magazines that interested her while she still lived in Morocco. She also expressed an awareness that some of them may not have been appropriate for her age or level:

> but I just bought English books, just listened to English music, and you know, I would like look up the lyrics and I'm just going to listen and read…And then, you know, from my additional readings and I didn't read and I probably did not read age appropriate books. It wasn't it was just things that interested me, even if they were not for my age and they weren't really books that were designed to teach you English. They were just books and magazines, things like that that I thought were cool…I guess I enjoyed... books that had pictures and that... Talked about America, like, you know, things about the culture and the lifestyle. I think that's something I really. I really enjoyed.

After moving to the USA, Claire reported being organically exposed to media such as news and TV:

> I immigrated to the U.S. and then just started working right away. So then I just, you know, continued learning just from interaction with coworkers and friends and just like movies and watching the news on TV and just like a very organically being exposed to the language more.

English-Speaking Romantic Relationships.

Lisa and Claire both shared experiences about the influence of English-speaking friends and relationships, with some experiences overlapping and with others diverging. Both Lisa and Claire reported speaking English at home with their significant others. Lisa reported regularly speaking English at home for a long period of time with her boyfriend, and now husband, starting before she moved to the USA and continuing to the present:

> I started dating my husband back then. Boyfriend. So. He is a English speaker. So. Yeah. We had to talk to each other. We would go on trips with each other and then eventually 2014, we got married and that's when we started. I moved in with him. We started living together. So before that, I was still living with my parents and, you know, mostly Chinese. But it's just. Ratio wise, I did have to speak more English. Whether it's at work or because my boyfriend and then after I married him. Then of course, like I lived with an English speaker. All the daily stuff has to be back in English. You know, when we talk about what to eat and, you know, go shopping or visit somebody. It would be in English.

Claire reported speaking a mix of English and Arabic with her husband at the time, whom she lived with after she moved to the USA:

> Well, I was married at the time, so my ex was from Morocco. So at home we spoke a mix of English and Arabic.

English Speaking Friends and Acquaintances (after Moving to the Target Language Country).

Lisa and Claire also both reported having social circles that were dominantly English language after they permanently moved abroad. Lisa described how her social dynamics changed, even compared to her master's degree experience in Australia:

> And from there, I came to the United States in 2016, where now again all of my life is around English, my academic success, performance, writing, publishing, teaching. So I'm English and I started having a much broader social circle in English, I would say. So compared to Australia back then, my social circles are students, international students, and now my social circles are much broader because first of all, like I met more professionals than students, right? And I then since then had two different full-time jobs where I've gotten to know people, not just through my husband. Right, but through myself with friends. And that I'll make, you know. So I yeah, I do think that my friends, coworkers, my classmates, my professors in the doctor program, my husband, my son.

Claire reported that her social circles also became dominated by English, and that she no longer had any Arabic speakers to interact with in her immediate social environment. She described having casual acquaintances with whom she would interact:

> Well, once I moved here, it was just English everywhere. You know, work to, you know, go get groceries just everywhere… But I didn't have friends from Morocco... So. Yeah, I didn't have anybody around me who spoke anything other than English…um not a group of friends, just mostly coworkers, but I worked full

time, so I was speaking English five days a week with coworkers. And then sometimes it would have like, you know, an after work, happy hour or something. Oh. So it was just that I hadn't I didn't have any close friends at the time.

Summary

Data collected pertaining to Lisa and Claire's English language practice methods revealed experiences that overlap and diverge. Both participants relied on different forms of English language media that catered to their interests in order to develop their language skills; Lisa reported watching reality TV shows while Claire reported reading books and magazines and listing to music. Both participants also cultivated almost exclusively English-speaking social networks after they moved from their home country to an English-speaking country. However, Lisa cultivated very elaborate metacognitive strategies to help develop her English skills, while Claire reported doing no practice to develop her skills. Also, Lisa maintained some networks of English-speaking friends prior to moving from her home country, whereas Claire spoke no English and had no social networks in which she used English prior to moving from her home country. Finally, Lisa presently communicated in Chinese with her son, who she described as the only person with whom she still regularly conversed in her home language. Claire did not regularly speak her first language with anyone, including her children, whom she reported could only speak English.

Table 7;

Theme 3: Approaches to practicing English

	Convergent Dimensions	**Divergent Dimensions**
	Independent use of English language media.	Differing focus in English practice methods.
	English speaking romantic relationships.	English speaking and acquaintances (prior to moving to the target language country).

	Convergent Dimensions	Divergent Dimensions
	English speaking friends and acquaintances (after moving to the target language country).	English language use with children.

Theme 4: Attitudes Towards Pronunciation

Participants expressed overlapping reflections on their attitudes towards pronunciation. This theme is divided into 3 dimensions: a.) awareness of pronunciation differences, b.) awareness of accent discrimination, c.) the importance of sounding like a native speaker.

Convergent Dimensions

Awareness of Pronunciation Differences.

Both Lisa and Claire both reported becoming aware of pronunciation differences at various moments in their learning. Lisa described how her awareness progressed, and her belief that it started with developing her listening skills to a proficient level. Soon after, she was able to identify distinctions in pronunciation:

> listening is always the prerequisite to be able to distinguish that there is a difference at all and then to make sense of that difference. And from there, you decide whether you want to change.

Lisa then described mentally categorizing pronunciation sounds, first based on foreign accent, and then on native accent descriptive difference:

> I think I'm always listening and my ears help me to distinguish how I sound different from others. And once I had more knowledge about different accents, varieties of English, I started to be able to put my observation into boxes. Right. Okay. I hear this word I pronounce differently. Is it because you're an American, a British, Australian, or you're Chinese? Like, you know, I started to be able to, like, have a conclusion once I observe the difference ,it's just because Americans say this and British people say it like that.
>
> They'll say like, hello, hello. Oh, and how are you like that. And then, you know, if it's like where you go, going, going, go into uni. Like they'll always say uni for university. So like I remember every time when I hear that I'll like in my by my. Like uni. Like how? How are you? How are you? And then like, until like I find that sort of like sounding like that and then I'll probably like naturally start using like that. And then there was that shift where my, my accent became more

> Australian towards the end because people would starting, people started asking me how long I've been lived in Australia and when I told them I'll just half a year or one year, one year and a half, and people are surprised that I had that Aussie accent.

Lisa then described some distinctions in accents that she noticed initially, between British, American, and Australian speakers:

> but I was interested in how Australian people talk and I remember hearing the male female difference and what's a stronger Aussie accent versus a lighter Aussie accent and how that's very similar to British accent. So if I was able to like draw conclusions like that, I must have already understood the main features of American, British and Australian English. By that I was able to distinguish that. And so I would try to slowly, like when I hear something interesting, right, then I'll try to sound like that.

Lisa described how she would explore the sounds of English spoken in different accents, and play or interact with the ones that she found unique or interesting:

> I may like that. Which is still a good pronunciation. Right. But it's not, you know, American style. I remember noticing those things. I remember trying to trying to sound like that. I also remember there's this feature I noticed like one day I was listening to a song or something like that and they say [Moun*ain]. And that like nasal sound. I did not used to say like that. It was like [moun*ain]. I always say mountain. Right. Like mountain and [moun*ain]. You sound very different. It's like, how do you make that sound… I could not make that sound. I remember, like, I was beatboxing. I was like, know, [beatboxing noises] like, trying to just to get that. Yeah. Even that's muscle coordination in my mouth. It's very foreign. And I do remember just kind of a long side of like that period. I started to understand more about features of, of a different accent and trying to improve. Not like that. I just focused on accent reduction, but I do remember like it's something that I can hear and when I hear it I wonder why do I not sound like that? And is it better to sound like that? And if it's better to sound like that, how can I produce the sound to sound like that? Yeah. So that is definitely true. And I think in general because, you know, growing up I've always thought the sound of English is very nice. And so I would like even in middle school, high school when I listen to a tape, right? I remember to kind of like. I think subconsciously I must be imitating. And I remember noticing that my teacher sound different from the tape and I would go with the tape and not the teacher, which I think is a good idea.

Lisa also described developing awareness of intonation and the role it plays in perceptions of accent. She reported first noticing this as part of a rubric for a test she studied for:

> I remember at one point paying attention to my intonation. Which is also very unique and not a lot of people pay attention to that. I think it did start with tests like IELTS, because if you look at their rubric, there in their scoring rubric, there's one category called pronunciation. And so 25% of your speaking score comes from that column. And pronunciation is a broad term. It actually included pace. It included intonation. You know, it included accent. In that one column. And if you look at the higher range towards the very top, they basically say that you have very minimal L1 accent and at the very bottom is like your L1 accent like is so harsh. It's like so strong. People don't understand you, right? Like people can't understand that there's a lot of pronunciation mistakes and that impedes communication. The middle range would be like noticeable accent.

Lisa then described some ways in which she noticed intonation as an accent feature, such as when delivering lists or questions:

> And there are patterns to follow too. Like the question is on the rise. When you have like listing things, it's always up, up, up and down. I would probably say down, down, down, down. And I would realize those patterns being different. And I'll try to sound like that if it's actually a rule or if I see enough is like, you know, examples that made me believe that this is what the American people sound like and I want to sound like that. Then I try to imitate and change the way I use my intonation.

Lisa described gaining further insight into the role of intonation in accent once she moved to English speaking countries:

> But the true usage of intonation, the true naturalness of intonation came, I think. When I started to hang out with more foreign like foreign friends and when I started living in America, like in Australia. And yeah, so that is when I started living in the language… And then I, it's, it's something because people have emotions, intonation, the origin of intonation comes from the emotions. When you're surprised, that's what you're saying. Are you kidding me. It's not the intonation itself is the emotion that's driving that intonation. And when I started to have emotion in English is when I can deliver that emotion through intonation.

Lisa described an awareness of pronunciation in her native Chinese language, and speculated that it was related to her awareness of accent in English:

> I think it's just because wherever I'm in, if I hear that, like, constantly, my speech will shift to be like that. This is in Chinese as well. If I go to if I hang out with my Northerner friends for a whole day, maybe towards the end of the day, I'll start sounding more like them than my like the Mai local people or, you know, like if I'm watching a Taiwanese drama, then I watch binge watching it all day.

> I'd probably sound slightly more in that direction. So like, I just I shaped by my environment as well in terms of like speech and pronunciation. I do believe if you just drop me now in the middle of say, you know, UK somewhere, have me live there for a few months, I probably were able to deliver a speech mostly in like, you know, the local accent there. And then coming back to America, I may be slowly shifting to the American because that's what happened. Like after I came back from Australia to China and then later to America. Like in the middle of that I married. I got married, right. And my husband is speaking like American accent, right? So in this case, I am I have more, more exposure to American accent. So eventually I changed to teach that. Oh, there's another thing that's interesting to mention.

Claire also expressed awareness of accent differences in English, and also expressed a preference for a specific variety, those she did not articulate a robust breakdown of individual elements:

> Well, probably the culture because I was never interested or attracted to go into England and I didn't really find the accent particularly attractive… [the North American accent] just sounded smoother and just sweeter to the ear. It wasn't harsh.

Awareness of Accent Discrimination & Possible Privilege.

Both participants speculated that their accents may have given them a different experience when interacting with native speakers, versus speakers with less native like accents. Lisa speculated that she may have avoided biases being assigned to her:

> Like there's still discrimination that one might face with pronunciation. I do think that because I have near native pronunciation, it made my probably made my social interaction much easier without me knowing it. I think I could be the exact same person, exact the same intelligence and exact same English fluency and accuracy. But just like removing the pronunciation part, let's say a more heavily Chinese accented. Would things be different? It could be. I think it could be.

Lisa expressed a belief that accent probably gave her an advantage in her career due to people's expectations of the role of English teachers:

> I think I do have advantage because of my pronunciation and I think it makes sense in my contacts because I'm an English teacher. Just like in in China, it's the same way if you're becoming… if you want to be a like a Chinese teacher, your mandarin pronunciation needs to be better than average. Like there is that requirement also. So it's like an important aspect in my job. So I think it's fine

> that they judge you like that, but not necessarily for other things. It shouldn't be too important for other things. Like if you're an actor or actress, you need to be able to cast out different roles. Having the ability to switch between accent is going to give you more opportunity and advantage rather than, you know, compared to somebody who can't do that. [51.2s] And that's natural. And I think that's fine. But just, you know, it does give you an advantage at the end of the day.

Lisa expressed a belief that because of her accent, native speakers in the USA would often assume that she was a cultural insider despite the fact that she was a relatively recent arrival to the USA:

> Yeah, I do think pronunciation helps me to be sort of I'm like people, locals here. They might unknowingly, just, like, immediately included me as an insider. Hmm. In the conversation, they wouldn't see me treat me as an outsider just because I think, you know, my fluency in my pronunciation is not different from a normal person that they interact with. They can have the same conversation with me that they had with just anybody else. And without noticing, without constantly being reminded that, okay, this person is like fresh off the boat from another country, right?

Claire also speculated that accents may make it easier to navigate society in a target language environment:

> I mean, it makes your life easier, I guess. You sound like a native speaker. I don't know. It's probably easier to communicate, maybe easier to make friends. I don't know. Maybe easier to get a job. So it does make your life easier.

Claire also speculated about situations in which her accent may have advantaged her personally:

> I mean, it probably allowed me to get certain jobs. And I guess I can, you know, help you get less discriminated against, not just in jobs, but in general. So it is a good thing. You know. If there's anybody that doesn't like foreigners, if you have a strong accent, it might annoy them.

Claire also shared a story of a student whom she once taught, whose accent may have affected their self-esteem:

> I guess in the end of the day, it is important because that if it's just. All right. You know, obvious. And, you know, I can imagine if you have a strong accent. I

> know. I don't know the reaction of people around you could be negative and. I don't know. When I taught, I had a student who had a very, very strong accent. And she was always asking me what she could do to. To, you know, work on that. And I just shared with us some of the same things I shared with you, just like, you know, watch movies, talk to native speakers or things like that. And then as she was talking about it, she started crying. I think it affected her self-esteem. Guess she thought she didn't sound very smart even though she was an architect in her country. Just so I guess it boosts your self-esteem if you have you know, I wouldn't say that it needs to be native like, but just clear.

Claire also speculated that other students she had may have been less confident in her English classes:

> Well, definitely it's a self-esteem thing. Like, you know, when you have students in class, I mean, those who have, you know, a very, very strong accent there. They are aware of it and they don't want to speak as much in class. And, you know, and the ones who know how they have good pronunciation are more eager to participate.

The Unimportance of Sounding like a Native Speaker.

Finally, both Lisa and Claire expressed the belief that sounding like a native speaker was not an important or necessary goal for second language learners. Lisa expressed that as a teacher, she believed it was wrong to push students toward this goal:

> I don't think it's very important. But that's only because I. Am a TESOL person and I am aware of what's realistic. Right? It's almost unrealistic to expect a user to be a native, to have native like pronunciation. And if you hold that as your standard as teacher, then you're not a good teacher because you are probably going to discourage your student and stop them from opening up.

Lisa also invoked the concept of English as a world language to explain why sounding native was not important to her, and to highlight the importance of inclusion:

> when in reality, English is the global language. We know that and the industry knows well that what matters is the intelligibility and not to be native like. [So there is that. What's in reality, what's actually happening, of course, varies. Right. It's just like here in America, you would say America is already a country that focuses on more diversity, inclusion and things like that. America is probably already a world leader in terms of that.

Lisa articulated her view of the best way to view pronunciation, which was to provide good examples, to encourage clear pronunciation, and to let students pursue native like pronunciation at their own leisure or interest:

> The right way to think about the importance of pronunciation is that we need to help non-native speakers too. We need to demonstrate good examples, right? And teach them to avoid any pronunciation mistakes that would lead to misunderstanding. If it helps the learner improve confidence and this person is willing to invest time and energy into improving pronunciation, I think it's no issue. One should be given the opportunity to practice and to improve if she or he or she wishes to, and if he or she is talented in this aspect, then it probably would give him or her very good result in return. But it's not something that people should care too much if there is no need to.

Claire also expressed the belief that sounding like a native speaker was not important, and that it was important to be understood. Claire also expressed an affinity for different accents:

> I don't think it's important to sound like a native speaker. I think you just have to be able to make yourself understood. I think that's the most important part, I think. Accents are very pretty and they, you know, indicate where you're from, which is kind of nice… Because I just enjoy hearing different accents. I think it's a beautiful thing when they're easy to understand. I just find them attractive.

Claire also expressed that pursuing more native pronunciation could boost your self-esteem, but that she did not believe it was important to sound native. She spoke again about her student who struggled with pronunciation:

> Just so I guess it boosts your self-esteem if you have you know, I wouldn't say that it needs to be native like, but just clear. Hers was just very heavy. Like sometimes you couldn't decipher what she was saying. So, yeah. So I think clarity is the most important thing.

Summary

Both participants expressed overwhelmingly similar attitudes towards pronunciation, with little to no divergence from each other's perspective. Both participants had begun detecting native-accent differences and assigning meaning or value to them within the course of their language learning. Both participants could conceptualize the ways in which accent

discrimination could negatively affect the lives of speakers, and both participants speculated that their own pronunciation may have allowed them to escape certain negative experiences. Both participants also expressed the belief that nativelike pronunciation was not necessary, and that focusing on it could affect the self-esteem of learners. Both participants expressed that clear and understandable pronunciation was the goal, and that learners should only aim for native pronunciation if it was within their interest.

Table 8;
Theme 4: Attitudes towards pronunciation

	Convergent Dimensions	**Divergent Dimensions**
	Awareness of pronunciation differences.	N/A
	Awareness of accent discrimination and possible privilege.	
	The unimportance of sounding native.	

Summary of Themes in Chapter 4

This section summarizes the themes and dimensions analyzed in this chapter. Of the four themes that emerged from this analysis, theme 1: Interest in English beyond instrumental purposes, theme 2: English language identity and theme 4: Attitudes toward pronunciation revealed largely overlapping experiences shared by both participants. However, theme 3: Approaches to practicing English revealed a mix of overlapping and divergent experiences between both participants.

Both participants shared overlapping experiences regarding Theme 1: Developing an Interest in English Beyond Instrumental Purposes. These experiences included a pursuit of English for enjoyment or stimulation, but not for the purpose of achieving a primary goal or

objective related to school or career. These experiences also included seeking English material that each participant connected to personally rather than seeking out material prescribed by school or peers as appropriate for English learning. Both participants also shared experiences of relying on their English skills as cover to escape rigorous work, either at school or at home. Finally, both participants articulated specific features of the English language with which they expressed fascination.

Both participants again shared overlapping experiences regarding Theme 2: English Language Identity. The experiences that were shared illustrated similar experiences that influenced the development of the participants' identities through the course of their language learning. Both participants shared experiences of going abroad temporarily, and they shared how these experiences influenced their relationship to the target language once they returned. Both participants also shared experiences of how positive feedback received from people on their English performances developed their confidence and reinforced the language skill as a part of their identities. Participants also shared experiences about the influence of career choices, specifically how both participants eventually became credentialled English teachers despite initially having unrelated career goals. Finally, both participants cited a belief in their innate talent as a reason for their success in English language.

Discussions around Theme 3: Approaches to Practicing English revealed a mix of overlapping and divergent experiences between both participants. Both participants shared experiences of focusing on English language material that they connected with, which was also mentioned in the summary of Theme 1. Both participants also shared experiences of speaking English with their partners in committed romantic relationships. Both participants also shared experiences of cultivating primarily English-speaking social circles after moving permanently to

a target language country. However, participants expressed differing experiences when discussing methods for practicing English; one participant reported utilizing rigorous and targeted metacognitive strategies to achieve the pronunciation results that she wanted, while the other participant did not recall using any meaningful practice strategies at all. Participants also had differing experiences of English social networks prior to moving to the target language country. One participant maintained a limited but meaningful social network of English-speaking friends before she moved from her home country, while the other participant reported having virtually no English speakers to speak with and very little English-speaking opportunities prior to moving from her home country. Finally, the participants had differing experiences of using English with their children; one participant actively and consciously spoke with her son in her native language in order to maintain her son's proficiency, while the other participant spoke with her children in English because they did not know any other language.

Both participants also shared overlapping experiences regarding Theme 4: Attitudes Toward Pronunciation. Both participants expressed a meaningful awareness of pronunciation differences during the course of their language development. Both participants also expressed an awareness of accent discrimination and speculated that their own pronunciation may have shielded them from some negative experiences and outcomes. Finally, both participants expressed a belief that achieving a nativelike accent was unimportant and unnecessary, and that clear pronunciation should be the goal for English language learners.

The implications of these findings and their relation to prior research were discussed in Chapter 5.

Table 9;
Summary of themes in Chapter 4

Themes	Convergent Dimensions	Divergent Dimensions
Theme 1: Interest in English Beyond Instrumental Purposes.	Discovery of interest in the English language.	N/A
	English is not a primary objective.	
	Independent choice of materials based on interest.	
	Using English as a cover for achievement.	
	Articulation of attraction to specific English features.	
Theme 2: English Language Identity.	Influence of going abroad.	N/A
	Influence of achievement and positive feedback.	
	Influence of career choices.	
	Self-perceived talent.	
Theme 3: Approaches to Practicing English.	Independent use of English language media.	Differing focus in English practice methods.
	English speaking romantic relationships.	English speaking and acquaintances (prior to moving to the target language country).

Themes	Convergent Dimensions	Divergent Dimensions
	English speaking friends and acquaintances (after moving to the target language country).	English language use with children.
Theme 4: Attitudes toward pronunciation.	Awareness of pronunciation differences.	N/A
	Awareness of accent discrimination and possible privilege.	
	The unimportance of sounding native.	

CHAPTER FIVE: DISCUSSION

This study investigated the self-perceived factors that influence ultimate attainment in pronunciation for adult learners who are late starters. The final chapter will discuss relevant conclusions based on the findings presented in chapter 4. This will be followed by implications for future research and limitations.

RQ: What self-perceived factors influence the ultimate attainment in pronunciation for adult L2 learners (late)?

This investigation was designed to generate data in order to answer this research question. A qualitative phenomenological study conducted, and the data collected through it revealed insights into the self-perception of two exceptional learners as well as environmental and contextual information about their language learning experience. This information contributed to illustrating the essence of the experience of these two language learners.

Themes revealed in the findings showed six main conclusions: a.) Participants demonstrated an interest and investment in English for personal satisfaction, b.) Participants built positive identities around their skills in the English language, c.) Participants prioritized English speaking social networks when they moved abroad, d.) Participants did not share universal use of strategies or networks, despite arriving to the same result, and e.) Participants shared attitudes that pronunciation is a consequential language feature and f.) Participants believed that sounding native is an unnecessary goal for other learners. The participants in the study maintained largely consistent motivations, attitudes, and social profiles, although their methods for practicing English did not consistently overlap. Furthermore, many insights revealed from previous literature were also present in the experiences of one or both participants.

Participants experienced an interest and investment in English for personal satisfaction.

Both participants experienced intrinsic interest and enjoyment in their pursuit of the English language. They expressed engagement with features of the language that they enjoyed, and they both actively sought out English language materials that they connected personally. Both participants also felt feelings of pride at the feedback they received, which would go on to reinforce their sense of enjoyment of developing their English language skills. Yet neither participant maintained long term goals that directly included English mastery for career or academic achievement, and therefore did not cite instrumental motivation as a primary reason for their achievement. In a possibly related finding, participants also utilized materials (specifically media materials such as TV shows and magazines) that diverged from what was used or prescribed for learners who were learning English as their primary goal. Rather, these materials were chosen out of personal interest and curiosity, even though both participants acknowledged that they weren't what their peers used or that they may have been inappropriate for English learning.

These overlapping dimensions of experience support the notion that viewing English learning as an intrinsically satisfying practice, unattached to external or high-stakes motivations, may sustain a learning trajectory that leads to an exceptional level of attainment in pronunciation. This lends support to one factor identified by Moyer (2014) that was consistent across the profiles of successful learners that she examined: a pride in L2 attainment (intrinsic motivation). This factor was observed in every case of an exceptional learner that was analyzed (Ioup et al, 1994; Major, 1993 as cited in Moyer 2014; Molnar, 2010; Moyer, 1999 & 2004; Munoz & Singleton, 2007; Nikolov, 2000) lending strong support to the idea that pride in linguistic achievement may be a factor in exceptional ultimate attainment of pronunciation. The

idea of pride as a motivating factor also supports Levi (2015)'s suggestion that achievement in pronunciation may be related to pronunciation providing a meaningful connection to the lives of learners. According to Levi, a desire to sound native may not be sufficient without a meaningful connection. Pride, individual feelings of joy at achievement, or engagement with personally interesting material may all be methods capable of filling this role of meaningful connection for learners.

Participants built positive identities around their skills in the English language.

Both participants shared similar experiences of their language learning influencing their identities. Both participants made trips abroad to target language countries prior to moving permanently to a target language country, and reflected that the experience increased their investment and engagement with the language upon return. Participants were also shaped by receiving positive feedback from parents, friends, teachers and native speakers while practicing English. In the previous section, the role of achievement and a positive feedback loop was discussed in the context of intrinsic motivation. In this context, it may have played a role in shaping a positive self-image of participants and their language abilities, as both participants reported growing more confident as English language experts the more positive feedback they received. Both participants also eventually changed their long-term goals and became credentialed English teachers. Although neither participant specifically credited their affinity for the English language for this change, both expressed awareness at how perceptions of their abilities affected their credibility as teachers. Both participants were also aware of their 'talent' and made explicit proclamations of their talent in pronunciation.

The overlap of these dimensions of experience may indicate a feedback loop in which achievement and positive language experiences influence a core of identity over time, gradually opening participants towards practices that reinforce that self-image. To paraphrase one

participant, when asked about how English language influences her identity, she had said that "a sense of exceptional competency in a skill becomes part of your sense of what you can offer to the world. This relationship with identity, as revealed by this study, appears to be a departure to that described by Moyer (2014). In Moyer's analysis, the influence of identity on several cases of exceptional learners is portrayed more as an integrative orientation. In other words, the subjects of these cases placed a high value on becoming "bona fide residents of the target country" (Nikolov, 2000 p. 116) or on adopting a target language identity, such a Major's exceptional Portuguese speaker who reported "feeling Brazilian" (Major, 1993 as cited in Moyer, 2014). However in this study, the influence of the foreign language on identity is one that is additive to a core identity, rather than the embrace of a new identity. The participants in this investigation did not express any desire to integrate into a target language identity; rather both portrayed the influence of English as an enhancement of their own established identities. This finding suggests an alternative finding that a strong, adaptable self-identity, rather than a solely integrative one, can also be seen in some exceptional learners of L2.

Participants prioritized English speaking social networks when they moved abroad. This investigation found that both participants, upon moving to the target language country, experienced a transition in which all of their domains of communication became primarily English speaking. For Lisa, these domains included her academic domain, her professional domain, her social domain, and even her personal/ family domain. For Claire, these included her professional domain, her personal/family domain and also her limited social domain. Neither participant sought nor maintained a social network with their native language once they moved to the target country.

These overlapping dimensions of experience support the notion that prolific L2 use across multiple domains is a factor associated with exceptional development in L2

pronunciation, a finding also discussed by Moyer (2014). The use of English across multiple domains has also been observed in every case of other exceptional learners profiled analyzed (Ioup et al, 1994; Major, 1993 as cited in Moyer 2014; Molnar, 2010; Moyer, 1999 & 2004; Munoz & Singleton, 2007; Nikolov, 2000), which adds further evidence of this feature as a relevant factor to this phenomenon. This factor was also noted by Levi (2015) as absent from the experiences of unsuccessful learners, who reported very little L2 social contact in his study. Levi noted that his participants did very little to pursue social circles with individuals who spoke L2.

Participants did not share universal use of strategies or networks.

This investigation found that both participants had very little in common when it came to strategies used to practice English. One participant, Lisa, elaborated greatly on many diverse metacognitive strategies that she developed to help her achievement in English. These strategies resembled the types of strategies profiled in six of the seven studies profiled by Moyer (2014). However, Claire relied on no metacognitive or independent studies to achieve the same result, and even spent a large period of her life without use of the L2 prior to moving to the target country. While Lisa's approach represents a conscious, metacognitive, and intentional approach to language development, Claire's approach represents a more relaxed, receptive approach with no clear intent for English language mastery.

These experiences represent two diverging pathways to the same result. While use of metacognitive studies has been observed in the past, this current investigation suggests evidence that conscious metacognitive strategies may not be the only pathway to achieve this result. Only one study profiled made no mention of metacognitive strategies used by exceptional learners (Molnar, 2010) Profiles of successful learners lend strong evidence that metacognitive strategies can play an important role (Ioup et al, 1994; Major, 1993 as cited in Moyer 2014; Moyer, 1999 & 2004; Munoz & Singleton, 2007; Nikolov, 2000), but these results may also show that, while

use of metacognitive strategies may be an important factor it is not a definitive factor for all learners with the potential to achieve this result.

Participants shared attitudes that pronunciation is a significant feature.

The investigation found that both participants shared similar attitudes towards pronunciation and its significance in their lives and in other language learners. Both participants cited points in their language learning where they realized that qualitative differences in pronunciation had significant meaning. Both subjects also speculated about the phenomenon of accent discrimination, and the ways they may have been privileged by sounding like native speakers. This included possibly getting jobs or better treatment, having higher prestige assigned to them as teachers or being assumed to be cultural insiders in the target language country. This suggests a pragmatic awareness of pronunciation, including the hierarchy, meaning and sociolinguistic implications of different kinds of accents. This is a factor unexplored in depth by previous researchers, but it may have a relationship with the concept of choice and agency explored by Moyer (2017). A cultivated awareness of pragmatics may be a factor that informs learners choices about their language acquisition process, though this would require exploration in future research.

Participants believed that sounding native is an unnecessary goal.

Despite participants being aware of the challenges of speaking with non-native pronunciation, both participants expressed that they did not view nativelike pronunciation as a goal worth pursuing for typical language students. Instead, both participants stressed that having pronunciation that was clear and understandable should be the ultimate goal. Both participants acknowledged the struggles that students would have at achieving native pronunciation. Lisa speculated that it would negatively affect students' confidence in pursuit of an unrealistic goal. Claire mentioned that she enjoyed the variety of accents in the English language and thought

they added more value to the world. Both participants stated that language teachers should be promoting and encouraging the diversity of linguistic pronunciation.

These dimensions of experience portray another divergence from previous findings of exceptional learners. Both participants express a descriptive orientation for different accents and an openness to their variety *in other learners*. This may be influenced by their professions as teachers, who would have developed some subjective idea about what is realistic for their students. It may also be a reflection of their belief in their own talents as learners, and that these skills are not easily accessible to all learners. It also represents a divergence in previous profiles of exceptional learners, in which learners placed a high value on sounding like native speakers (Major, 1993 as cited in Moyer 2014; Molnar, 2010; Moyer, 1999 & 2004; Munoz & Singleton, 2007; Nikolov, 2000). This investigation offers evidence that disagrees with the notion that a strong desire to sound native is an indispensable factor in the achievement of this goal.

Limitations of Study

This section will discuss some limitations of this study's methodology that should be taken into consideration when interpreting the results and implications.

The first limitation is the age which this study selected as the cutoff onset age for recruiting participants: 12 years old. Previous research has supported the establishment of a critical period between the ages of 12 and 17 years. This study chose the earliest end of this window for the reasoning that a.) It was well supported by literature and b.) to grant the investigation the most generous window within reason to successfully recruit eligible participants. This investigation also attempted to maintain the trustworthiness of this decision by establishing a higher age required for participants' intense exposure to the L2 (both participants were at least 20 years old when they first had an immersive L2 experience). Nevertheless it must

be acknowledged that had this study recruited participants with a higher age cutoff (i.e. 13, 14, 15, 16 or 17), different results may have been found, and trustworthiness may have been more robust. This should be considered for future research with the time and resources to recruit exceptional learners with a higher aga of onset. The findings of such a future study would serve as a valuable test of the transferability of the insights from this investigation and previous ones.

The next limitation is the sample size recruited, which was N =2. This study initially aimed to recruit a minimum sample of N = 3, and ideally a sample size of N = 5-15. However, despite the researcher's exhaustive efforts, which included canvassing universities across the state of Florida and petitioning language communities online and locally, the researcher only produced 2 participants who were able to pass the screening process and make it to the data collection phase. The difficulty of recruiting participants to this study highlights the uniqueness of the population being investigated, and it also speaks to the rigor of the screening process. Case in point, there were several participants within the 18 recruited in the screening process that the PI believed would be rated as native speakers, but the judges (correctly) identified them as nonnative speakers. This outcome suggests that the screening process was properly objective and robust, and it validates the trustworthiness for the 2 cases it produced for data collection. However, the small number of participants analyzed for data may also lower the value of comparable results and the conclusions that were derived from them. Future investigations with appropriate levels of time and resources can remedy this by employing the same study design – including the screening process and the interview protocol- to produce more eligible subjects for data analysis. Comparing this additional data alongside data retrieved from this investigation would serve to confirm (or complicate) this study's conclusions, and it may yield comparative data that adds more value to the insights of the current investigation.

Implications for Practice

This section will explore how the findings of this research can be used to inform practice of teaching in the area of pronunciation. This research was intended to generate practical insights that may inform how educators approach pronunciation, including the practicality, appropriateness and possible consequences of encouraging students to strive for a nativelike accent. To be clear, there is a need for future research on this subject to examine more exceptional learners, in order to draw more concrete and generalizable implications for teaching. However, the current research offers several implications to consider:

1). The ability to obtain nativelike pronunciation is best sustained by a personal drive and interest in language learning. Thus, if a teacher can cultivate an environment that encourages independent and joyful pursuit of language, learners with this goal may benefit.

Participants in this study both expressed the importance of having access to a variety of English language materials that they could find and connect with, including magazines, books and novels, comic books, and television shows. One suggestion for teachers is to maintain a reading corner or a library that contains these types of materials and keeps access open for students to explore them independently. For audiovisual materials, like TV series or movies, this would also require maintaining the technology required for playback, or a method of assisting students to access the materials via streaming services. Another suggestion would be to identify any local establishment that specializes in foreign language material, such as a bookstore, and encourage students to explore the materials there. Any effort that would facilitate students' independent exploration of extracurricular language materials would work to foster an independent desire to use the L2 outside of the classroom.

2). Metacognitive strategies are a tool that can benefit some students in pursuit of this goal. Teachers can aid students by equipping particularly interested students with practice techniques that they can use independently.

In this investigation, the participant named Lisa gave three examples of metacognitive strategies that she used. They included:

- Isolating the minimal pair differences of words based on the native accent style, and then gradually incorporating the native style into whole/natural speech practice, on the sentence level and then on the conversation level.
- Intentionally focusing on intonation of the L2 and using it in step with the way L2 native speakers use it. In the case of North American English speakers, this meant to practice using intonation as a manner of expressing emotions (surprise, excited ness, confusion, etc.).
- A practice called *shadowing*, in which the learner chooses an example of a native speaker that they want to sound like, and then speaks as they do immediately following a recording of the speaker's voice. The learner can supplement this by recording their own voice, listening to it, and then adjusting their pronunciation to better reflect the model.

Teachers can offer these strategies, as well as metacognitive strategies described in both previous and future research on exceptional learners. Other strategies identified have included "self-monitoring, imitation of native speakers, attention to difficult phonological features, and explicit concern for pronunciation accuracy" (Moyer, 2014 p. 426). In general, metacognitive strategies of language learning can include any plan of practice that incorporates "planning, goal-setting, reflection and evaluation" (Oxford, 1990 as cited in Moyer, 2014 p. 426).

3.) The ability to obtain nativelike pronunciation may be aided by developing strong and positive experiences with language learning. Students who feel and experience success, both in the classroom and interacting with the language independently may benefit from motivating feedback and continue to develop their language. Teachers should consider how they want students to experience language learning, and what sort of encounters will leave positive impressions on learners as they develop their language skills. Examples of activities designed to build positive relationships include low-stakes communication activities, such as dialogue journals and free-speaking conversation sessions where learners are encouraged to communicate without being critiqued. Of course, arranging encounters with friendly and open-minded speakers of English (native speaking or otherwise) for conversation practice may also provide a path to this outcome.

4.) Prescriptive approach to learning or instrumental goal orientations appears to have little effect on the ability to achieve the skill of native like pronunciation. This research suggests that innate interest and self-motivation have greater significance than extrinsically imposed goals. Practitioners should bear this in mind when choosing goals for their students or counseling students on their goals. Particularly, practitioners should emphasize, in reference to student goals, that there is no prescribed pathway (that we know of) that leads to nativelike pronunciation, but many successful learners who have achieved it have done so with a strong, self-driven interest in the language, which likely sustains their motivation enough to eventually achieve the outcome.

5.) If students do not have the interest, joy, or motivation in language learning, then pursuit of nativelike pronunciation may be more harmful than beneficial. Holding high expectations to achieve a difficult task can affect self-esteem and can obscure more practical goals of developing

clear pronunciation and fluency in other areas. Pronunciation mastery should be pursued in a manner that is not psychologically unhealthy or unproductive to more practical goals. Practitioners should emphasize that the pursuit of nativelike pronunciation is a self-driven endeavor, and they should be available to support interested students. To this end, practitioners may also consider normalizing the use of non-native accents by incorporating them into lessons. This can be done through diverse listening materials and even through the invitation of other non-native speakers to speak in the classroom. Practitioners may also consider exposing students to non-standard varieties of the language, particularly if they are likely to encounter them in the target regions that are being studied (for example, regional varieties of North American English). Exposing students to different varieties of the spoken language will help students to view accent from a descriptive standpoint, as opposed to a prescriptive one. It will also strengthen the notion that pursuing a nativelike pronunciation is an option to be sought at one's leisure, rather than a high-stakes standard to which ultimate success should be held.

Implications for Future Research

This final section will discuss the role that future research can play in order to expand the knowledge gained from these insights. As previously mentioned in the literature review, there exists a gap in studies that examine cases of exceptional learners with a consistent and comparative qualitative methodology. This investigation aimed to investigate cases of exceptional learners using such a methodology and succeeded in recruiting and analyzing two such individuals. Future studies can continue to intentionally seek exceptional learners of pronunciation, and ideally apply the same methodology and tool to generate even more comparative data. This investigation only succeeded in recruiting two eligible participants and ideally would have recruited three or more participants; this leaves ample room for future studies

to continue to fill this gap. This would allow the pool of data available for analysis to grow, and for potential insights about exceptional learners to expand. In particular, more studies into exceptional learners could yield more insights into metacognitive strategies used by learners, which were limited in the results of this study.

Future studies may also evaluate the role of gender in exceptional pronunciation acquisition. Although it was not relevant to the scope of the current investigation, the researcher's review of literature highlighted research that suggested gender may affect how sensitive or urgent a speaker may feel when detecting non-native speech, particularly in formal contexts. In their study on foreign accented speech and favorability, Callen *et al* (1983) found that female Greek participants gave the lowest favorability and status ratings to Greek accented English. Additionally, Ryan & Carranza (1975)'s study of a multiracial, all female high school found that when students heard recordings of foreign accented male voices, those recordings received unfavorable ratings of status in the context of school. One question worth exploring from these results is whether or not female participants are more cognizant of the status markings of non-standard accent varieties, and whether these affect their choices or processes when developing their second language pronunciation. Future studies could investigate this.

Finally, in this study the factor intrinsic motivation emerged as a strong theme. Future research into exceptional learners of pronunciation should continue to investigate the role of learners' relationships with the L2 as a possible factor in their achievement.

Final Thoughts

Pronunciation is a feature of human identity that offers a snapshot into the tremendous scale of human diversity. Yet like other features including race, gender, religion, ethnicity, or ability, there often exists an impulse by society to assign accents, foreign or regional, into status

hierarchies or to project assumptions about peoples' lives or capabilities. Similarly, for decades, scholarship looking into the factors that lead to pronunciation outcome have steadfastly held to assumptions about biological limitations despite the challenges of designing experiments that could rigorously investigate this phenomenon. Challenging both of these tendencies was a necessary and important reason for choosing to research this topic. Given the ways pronunciation can affect speakers experience in society, it is imperative that scholars learn as much as possible about why speakers arrive at different outcomes. Doing so supports two objectives: It can deconstruct ideologies that attach differing statuses to the ways that people speak, and it challenges a status quo in language learning that discourages aspirations for change and growth. This is what the researcher aimed to do with the current study. Furthermore, the researcher hopes that this study's insights will be valuable to our understanding of the limits of human learning, and that it provides insights for teachers to nurture a spirit of curiosity and engagement for language acquisition within their students.

APPENDIX A:
ENGLISH LANGUAGE PHONETIC PASSAGE FROM LaeP PROJECT

The Tiger and the Mouse

“A tiger and a mouse were walking in a field when they saw a big lump of cheese lying on the ground. The mouse said: "Please, tiger, let me have it. You don't even like cheese. Be kind and find something else to eat." But the tiger put his paw on the cheese and said: "It's mine! And if you don't go I'll eat you too." The mouse was very sad and went away.

The tiger tried to swallow all of the cheese at once but it got stuck in his throat and whatever he tried to do he could not move it. After a while, a dog came along and the tiger asked it for help. "There is nothing I can do." said the dog and continued on his way. Then, a frog hopped along and the tiger asked it for help. "There is nothing I can do." said the frog and hopped away.

Finally, the tiger went to where the mouse lived. She lay in her bed in a hole which she had dug in the ground. "Please help me," said the tiger. "The cheese is stuck in my throat and I cannot remove it." "You are a very bad animal," said the mouse. "You wouldn't let me have the cheese, but I'll help you nonetheless. Open your mouth and let me jump in. I'll nibble at the cheese until it is small enough to fall down your throat." The tiger opened his mouth, the mouse jumped in and began nibbling at the cheese. The tiger thought: "I really am very hungry.."

APPENDIX B:
RATING SHEET SAMPLE

You will hear a series of recordings of different speakers reading and speaking English words, phrases and texts. There are four tasks in all. For each different speaker/task, please judge whether the speaker is a native English speaker (i.e. English is his/her mother tongue). Also, for each judgement you make, please assess how confident you are in your judgement. You may also note a particular sound, word, stress pattern, intonation pattern or other aspect of the language produced which led you to judge a particular speaker as non-native.

You may pause between each task to record your response. If absolutely necessary, you may rewind to listen a second time.

Thank you for your participation in this project.

		Is this a native speaker?	
Speaker	Task		
1	A	Yes	No
2	B	Yes	No
3	C	Yes	No
4	D	Yes	No
5	A	Yes	No
6	B	Yes	No
7	C	Yes	No
8	D	Yes	No

APPENDIX C:
SUBJECT QUESTIONAIRRE

Please take your time answering each question, as your honesty and insights for each question are valuable for drawing conclusions from this project. Thank you!

Part One:

1. Native language:
2. Other languages spoken at home as a child:
3. Age at first exposure to English….
    A. through *instruction:*

    B. Through *immersion-type environment* (Living in an English speaking country):

4. Years of total *instruction* (i.e. language courses and content-based coursework) in English up to present day:

5. Years of *total immersion/exposure* to English (i.e. speaking it at home with Native speakers and/or living in an English-speaking country):

6. Major motivation for studying English at this time (please elaborate- use both choices if appropriate):

    a. Professional:
    b. Personal:

7. Ultimate goal in studying English (please elaborate):

    a. Professional:
    b. Personal:

APPENDIX D:
IRB APPROVAL LETTER

UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138, IRB00012110
Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

February 7, 2022

Dear Antonio Losavio:

On 2/7/2022, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study, Exempt Category 2(ii)
Title:	LATE STARTS LEADING TO NATIVE-LIKE PRONUNCIATION IN SECOND LANGUAGE ACQUISITION
Investigator:	Antonio Losavio
IRB ID:	STUDY00003866
Funding:	None
Grant ID:	None
Documents Reviewed:	• Consent form, Category: Consent Form; • English Language Phonetic Passage from LeaP Project, Category: Test Instruments; • Exemption Request Form, Category: IRB Protocol; • Interview Protocol, Category: Interview / Focus Questions; • Rating Sheet Sample, Category: Test Instruments; • Study Recruitment Flyer, Category: Recruitment Materials; • Subject Questionnaire, Category: Survey / Questionnaire;

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Renea Carver
UCF IRB

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