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**What Are Common Phonetic Speech Variations of L1 Portuguese Speakers Learning
English?**

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Abstract

The English pronunciation of six Brazilian Portuguese language learners as well as their language experiences and attitudes are the focuses of this study. Participants provided information regarding demographics and experience with English, then completed the same reading exercise in Portuguese, then English. Interviewees answered the questions and completed the exercises remotely during a Zoom call. Findings include language attitudes and raw phonetic data. All nonstandard pronunciations were transcribed in the International Phonetic Alphabet (IPA) and prominent unintelligible articulations are highlighted in this study. The resulting pronunciations are derived from the learner's interlanguage and their understanding of phoneme-grapheme relations between the L1 (Portuguese) and L2 (English). Even learners with higher proficiency levels stumbled over the same words, which demonstrates a common cognitive method for processing difficult L2 words. Nine unique words, with the respective pronunciations are emphasized. The findings of this project are beneficial to linguists, language educators, and language learners alike.

Keywords: Portuguese, English, phoneme-grapheme relations, English language learner, phonetics, language acquisition, language instruction, interlanguage, markedness

What Are Common Phonetic Speech Variations of L1 Portuguese Speakers Learning English?

English learners from all corners of the world could benefit from instructors who can consider their linguistic background. This project that elicits oral language production from participants in their L1 and L2 serves as a way to show gaps or confusions in phonetic awareness. These areas can be addressed through identification of students' goals, and assistance in their pronunciation. My participants are L1 speakers of Portuguese from southeastern Brazil near Sao Paulo. All of them have received some English training, yet vary in their abilities. This project seeks to address unique phonetic characteristics of their English. Certain speech sounds will affect the accent of a person. According to Osborne and Simonet (2021), a person likely has an "accent" in their L2 (2021). Also from their study, as in mine, some of the participants do not frequently interact with native English speakers, besides their teacher. Osborne and Simonet assess the "strength of non-native accent." The non-native English accent in this project will be evaluated from the lens of the researcher, who is an American English speaker with an Inland Northern accent, who is fluent in Spanish, and conversational in French and Arabic. This study seeks to analyze the non-native accent through phoneme identification and phonological overgeneralization as found in Azevedo (1981) and Osborne (2008), yet will also address an individual's language background. In particular, the focus will be on words that were pronounced incomprehensibly. Hopefully, English language learners and ESL teachers alike will benefit from the additional findings of this project. This study seeks to answer the question "What are common phonetic speech variations of L1 Portuguese speakers learning English?"

Literature Review

Portuguese is not a language known for having many similarities with English, which provides a unique dynamic for Portuguese speakers hoping to learn English. A variety of academic reports address the similarities and differences between Portuguese and English, (Osborne & Simonet 2021, Azevedo 1981, Azevedo 2005, Osborne 2008, Kivistö-de Souza 2017, John & Cardoso 2017, Silveira 2009), which gives insights for language production. More specifically, a few of those studies were related to Brazilian Portuguese speakers in Brazil learning English (Osborne & Simonet 2021, Kivistö-de Souza 2017, John & Cardoso 2017, Silveira 2009). Osborne and Simonet (2021) identify several effects on a language learner's accent in the L2: age of acquisition, experience, length of formal instruction, motivation, and aptitude. They also mention that in Brazil, English classes from sixth grade to high school have only been required since January 2020. Patkowski (1980) sought factors besides age that could affect a person's L2, yet he realized that age was often connected with length of formal instruction, and number of years immersed in that language. My project seeks to draw on pre-existing literature while also adding a fresh dimension to the field which relates to TESOL and pedagogical approaches.

Interlanguage

Azevedo (1981) recognizes interlanguage, originally coined by Selinker 1972. He further defines it as the hopeful replica of the L2, as a combination of raw phonetic data, explicit information, and rules from the L1, which constitutes the learner's constantly changing set of hypotheses for how to properly utilize the L2. Language learners can identify cognates or even roots of words in both languages that seem to branch from a similar origin. Schuhmann and Huffman (2014) recognize that language learners may struggle distinguishing the L1 and L2

phonology in particular. However, Soares and Grosjean (1984) note that linguists are evenly split regarding their position on multilingual individuals having one or two lexicons. The researchers cite a few factors that affect word recognition which include word frequency, length, frequency of first syllable, then the accompanying syntactic and semantic context (1984). A word's frequency is related to its markedness which is defined by Merriam Webster as "overtly signaled by a linguistic feature." Lightbrown and Spada (2013) say that easily-learned, or unmarked vocabulary is frequently seen, heard, and understood. Language learners would at least hesitate, if not give up completely when asked to pronounce a complex and marked word from a language other than their L1. In reference to interlanguage, Soares and Grosjean (1984) posit that multilingual individuals may not be entirely in one language "mode" or another, yet instead they may be anywhere on a spectrum between the two languages.

Osborne and Simonet (2021) consider "one could ask to what extent learners' L2 samples differ from those they produce in their L1. From this perspective, L2 learning has to do with their having formed sound categories specific to the sounds of their L2" (p. 2). Their findings concur with Zimmer (2004): learners activate L1 phoneme and grapheme systems when reading aloud in the L2. Osborne and Simonet (2021) establish that Portuguese and English share the same plosives /p/, /t/, /k/, /b/, /d/, /g/, but the two languages differ on VOT (voice onset time). In line with the idea of established sound categories, Portuguese speakers likely have their own distinct perceptions of how each grapheme (letter) sounds independently, and in combination with the graphemes preceding and following it. English spelling presents challenges, but the learner's own phonological representation of the grapheme could also lead to nonstandard pronunciation.

Syllable Simplification

Syllable simplification is broken down into epenthesis and paragoge (Silveira 2009). Epenthesis occurs after stops, but “paragoge,” is defined by Merriam Webster as the addition of a sound or syllable to the end of a word. John and Cardoso (2017) focused on the i-epenthesis, which is an insertion of [i] “after stops /p/ and /k/ in 1) word final like bishopi and magi[ki] and 2) word medial before T like chapiter, do[ki]tor, and 3) word medial before N te[ki]no.” This finding suggests that Brazilian Portuguese speakers are not comfortable with consonant clusters, since the i-epenthesis occurs in their L1, and it may carry on to their L2. For example, “lawyer,” which is “advogado,” yet many BP speakers pronounce it as “adivogado.” John and Cardoso (2017) suggest that phonological variation is typically lexical rather than derivational, so the insertion of [i] is likely more common in monosyllabic words. Silveira (2009) identifies vowel epenthesis in general (not just [i]) as a key factor in pronunciation. She conducted a case study with just one participant. She notes that her participant confused graphemes <n> and <m> when reading aloud, which shows how participants may mix up letters just like an L1 English speaker may do when reading. Since her study focuses on word final consonants and clusters, she noted that Brazilian Portuguese speakers favor pronouncing ends of words as vowels, glides, or nasals. For example, [r] tends to be deleted (comer ‘eat’ [ko'me]); [l] is generally vocalized and realized as the glide [w] (mal ‘bad’ [maw]) (Silveira 2012).

Phoneme-Grapheme Relationships in Portuguese vs. English

Osborne (2015) reasons that English phonemes /h/ and /ɹ/ are represented by the two graphemes <h> and <r>, but, in Brazilian Portuguese, both phonemes are conventionally written with the same grapheme <r>” (158). Therefore, it is likely that participants in this study could confuse /h/ and /ɹ/, and produce a phoneme for an entirely different grapheme, or a phoneme that

is nonexistent in English. Osborne cites Cristófaró Silva, (2007), In word-initial position, a glottal fricative /h/, a velar fricative /x/, and a trill /r/ can be pronounced allophonically. If multiple phonemes are allophones, the phonemes can interchange with each other in the same word and the same position, yet the word will not change in meaning. This principle is the driving force behind intelligibility for speakers of differing accents in the same language. They will likely understand each other because the use of allophones has not changed the meaning of the spoken words, which is why my study will focus on words produced unintelligibly.

Many other graphemes besides <r> and <h> can present confusions as well because the relationship of the orthography and phonemes of English and Brazilian Portuguese simply are not the same. Erdener and Burnham (2005) explain differences between languages like these. A common concern for native and non-native English speakers alike is the spelling. In English, rules are broken with great frequency, certain letters are silent while changing the pronunciation of others, and multiple graphemes make the same phoneme (like: f, ff, ph, and gh). These characteristics and more make what Erdener and Burnham (2005) call English an opaque language; a language that does not have consistent spelling rules (or often breaks them,) and one phoneme could be represented by many graphemes. On the other hand, Portuguese would be a transparent language because the graphemes and phonemes generally correlate and show a consistent, one-to-one relationship. One letter for example, d, is pronounced much differently in Portuguese than in English. Silveira (2009) produced a study on orthography in the role of L2 English for L1 Brazilian Portuguese learners and found that “the substitution of alveolar stops by alveopalatal affricates,” like “made” pronounced as [meydʒ]. This example shows that the ELLs were not necessarily pronouncing “d” incorrectly, but rather they carried the pronunciation of the grapheme from their L1 over to their L2. Inappropriately transferring a phoneme from an L1 to

an L2 is a common mistake for language learners around the world. Kivistö-de Souza (2017) found “The English high front and back vowels, [i-i] and [u-u], are frequently assimilated into a single Brazilian Portuguese vowel category, [i] and [u], respectively.” This serves as an example of the opacity in English, because graphemes <i> and <u> are pronounced differently based on surrounding letters.

Most studies compared Portuguese and English linguistically, while a few compared the languages with regards to the L2 English learner. Most generally, interlanguage is a key aspect observed through this study. My project provides genuine examples of a learners’ confusion between L1 versus L2 phonology, as shown by Schumann and Huffman (2014), Osborne & Simonet (2021), and Zimmer (2004). A few crucial findings also demonstrate “markedness” as defined by Lightbrown and Spada (2013), as uncommon words. My distinct project reveals that multiple participants, of varying English proficiency levels, share struggle areas, as they all completed the same exercises. This reveals a common cognitive process for approaching unfamiliar words in a second language. I attribute the participants’ challenge with phoneme-grapheme recognition to English’s opacity, as described by Erdener and Burnham (2005). Because my project is multi-faceted, and inspects the single-word level, the implications of this study are relevant to linguists, as well as educators and language students.

Methods

Instruments

Individuals were requested to provide consent and join my study as an opportunity to practice English and to later receive helpful feedback. Although the group of interviewees in this study is rather small, my participants represent an age group akin to the one researched by Osborne & Simonet (2021), 18 to 55 years old. Additionally, their control group was born and

raised in Brazil, which is the same for all of my interviewees. My study is unique from others, since my participants had all been my students at least once, so there was a personal connection. I chose these individuals because of our preexisting familiarity with each other. I believed they knew enough English to understand my request to be in the study. Once the Cedarville University IRB approved my project, and my potential participants agreed to be involved in my study, and agreed to be recorded, we arranged a time to have a conversation over Zoom. Each Zoom call was conducted one-on-one with each participant. Interviews which included the before and after questions as well as the reading passages were audio-recorded on my iPhone. For the reading passages, I recorded participants reading a Psalm in Portuguese, then in English. Psalms are full of expressive language that could inspire the participants, yet also serve as a challenge to pronounce. The reading passage is in Appendix A. Afterwards, I asked them about their perception of the readings. The before and after questions, found in Appendix B, explored concepts such as language attitudes, motivation, experience, and more. Additionally, in order to contribute an additional voice to my study, I conducted an interview with the founder of the ESL program which introduced me to the students in the first place. I sought information from him about common hurdles he has noticed for English students and how those challenges can be overcome. Mann (2010) established that interview questions should be meaningful, and contribute to a common purpose. Mann (2010) also suggested member checking and including quotes from interviews. Since I was recording a Zoom call from my computer on my phone, the audio quality was lower than an in-person conversation, and in some instances, the call dropped. In those cases, I asked the participant to pick up where the call had paused, then we continued the conversation as planned.

Participants

All of my participants are from southeastern Brazil. All of them have lived in Brazil their whole lives, but three of the six participants have spent several months (accumulated from various occasions) in the United States. All participants said that they consume media or read books in English. However, none of the participants said that they had read the Bible in English, so the style and content would be divergent from what they had previously read in English. Every person mentioned that the reading task in English was difficult because they saw some new and unfamiliar words which made it challenging. About half of the interviewees mentioned that they had studied English for a few years in secondary school. The others have received English education through one or more years of classes with iBox English as well as independent study. Because all of my participants are involved in iBox English, my study, in a way, is a micro case study. Casanave (2010) defines a case study as an investigation of “one person, one group, one institution, or one community” (67). My study focused on one group of six people. Participants range from 15 to 48 years of age, yet the participants’ age did not always affect their English ability. It is noteworthy that all of my participants were above the “critical period” of language learning. According to Lightbrown & Spada (2013), the Critical Period Hypothesis in languages suggests that humans who were not exposed to a given language before a certain age, typically puberty, will find it difficult, if not impossible to acquire that language. Only two of my six participants were exposed significantly to English before the critical period.

Please refer to Table 1 for participant demographics and ACTFL levels.

Justification of Reading Passage

Firstly, I chose a passage of Scripture because the Bible is meaningful to me. Secondly, Thomas and O'Connor Valenzuela (2020) conducted a text mining analysis of two versions of the

Bible which influenced the version that I selected. They concluded that between the *King James Version*, and the *New International Version*, the latter was the better choice for non-native English speakers. I chose Psalm 25 *NIV* as the reading, both in Portuguese and English for two reasons. Firstly, I wanted the message of the reading passage to encourage my participants. Secondly, I wanted passages in both languages to be as similar to each other as possible, which is why I used the same text. Finally, I selected this Psalm because even though it is the *NIV*, I anticipated that a few of the words may be challenging for non-native speakers to pronounce as they were atypical. My study focuses on phonetic production, to discover how English language learners pronounce unfamiliar words.

Analysis Process

Levelt (1989) described three stages of language production that are generally accepted in theories of second language acquisition: conceptualization, formulation, and articulation. These stages work well to describe the read aloud activities for the current study, because the participants perform all three steps in the exercises. For the sake of this study, “conceptualization” will refer to the participants’ initial reaction to the words they read, derived from their L1, (whether or not this word is a cognate) the orthography of the word, and the commonality of the word in the English language. “Formulation” will be viewed as the participants’ assumption of how the word is pronounced, based on their cognitive awareness of phoneme-grapheme relations. “Articulation” will refer to the participants’ non-native physical production of the phoneme. Notably, formulation and articulation function independently from each other, as the person may have a correct internal representation of the sound, yet they fail to physically produce it with a native accent.

Although I did not administer a quantitative survey like Osborne & Simonet (2021), my before and after questions did address key ideas and all elicited valuable information relevant to the constructs of this study. I listened to recordings, wrote the responses to the questions in a document, and analyzed nonstandard and unintelligible pronunciation. My inclusion and exclusion criteria is simple: I focused on words pronounced in a way that varied greatly from Standard American English pronunciation, thus deemed as unintelligible. I highlighted all of these: Israel, lonely, guide, fiercely, numerous, refuge, treacherous, descendants, and uprightness, and made note of how many of my participants also struggled with these words. The calculations served to measure the most relevant characteristics and data from my participants. I additionally recorded participants' answers to pre and post read aloud questions, which provide insights to their language attitudes and motivation. The constructs are investigated through genuine speech data from participants. The audio recordings on my phone allowed for continuous replays of the data so I could take a fine-tuned approach to identifying phonemes in both languages. I also tallied the percentages of words pronounced in a nonstandard manner which contained letters <h> or <r>. This calculation does not mean that all of these instances reflect words pronounced incorrectly, but it does show how the confusion between these letters as mentioned in the literature review can influence pronunciation. The phonemes produced by participants were compared to SAE and identified through Bickford's text and the interactive IPA chart. After I completed all of my IPA transcriptions, I sought the expertise of an independent reviewer, then made minimal corrections as needed.

Research Type

Because my project has various steps and purposes, it may be difficult to box this study into one approach. Due to its interactive and forward-looking nature, my project may be related

to Action Research. Burns (2010), defines four key characteristics of action research: 1) bring positive change or improve participants' social situation, 2) generate theoretical and practical knowledge, 3) enhance collegiality and collaboration with participants, and 4) and promote continual change, development, and growth. My completed study will address all of these aspects, and should lead to positive growth for participants and readers who apply the findings to their studies or professions.

Findings

Overall Results

After analyzing my IPA transcriptions, I found that all participants pronounced several of the same words in a nonstandard way. Those will be presented and examined here. Additionally, I identified a quantity of words pronounced uniquely by only one or two individuals, which will not all be reported in this study. Surprisingly, two less-conversational participants actually produced more native-like pronunciations of certain words than others who were more conversational in English. Participant demographics in Table 1 can be reviewed and compared with the number of cited nonstandard pronunciations in Table 2.

Firstly, 59% to 75% of the participants' noted nonstandard pronunciations were words which contained the letter <h> or <r>. These statistics, however, do not mean that the participants necessarily struggled pronouncing either of those graphemes in the given word. As shown in Table 3, 56% of the words emphasized in the study contained digraphs such as <ui>, <ie>, <ou>, <ch>, <ea>, <gh>, and <ae>.

Words of Emphasis from Results

I selected a total of nine words in particular from my transcriptions which were pronounced in a nonstandard way by half or more of the participants, or were otherwise

noteworthy. These nine words were selected due to the most unique articulations from one, a few, or all participants. Firstly, the pronunciation of “Israel,” articulated the same way by all six participants, is an example of L1 influence. The <r> in “Israel” was in fact pronounced as [h] by every person. The pronunciation of one word in particular, “lonely,” exemplifies vowel epenthesis. Four of the nine words revealed errors in phoneme-grapheme relations and formulation as the reason for the resulting articulations: “guide,” “fiercely,” “numerous,” and “refuge.” It should be noted that for “refuge,” none of the six participants pronounced <r> as [h], as I had been expecting, perhaps due to its word-initial placement. Three of the nine words proved challenging due to their length, and the participants’ error in conceptualization: “treacherous,” “descendants,” and “uprightness.” See Table 2 for exact IPA transcriptions of the pronunciations correlating with the respective participants.

Participant Engagement

All six of the participants verbally agreed during the interview that they were somewhat comfortable during the reading activity. In the post reading questions, all participants mentioned that the reading exercise was somewhat difficult. Every person attributed the challenge to the frequency of words unfamiliar to them. Higher English proficiency individuals explained to me that they understood the majority of the text and overall liked the project. Unfortunately, the two lower English proficiency interviewees struggled answering before and after questions, but others gave clear and definitive answers. Participant C mentioned, “the order is different what I see” in regards to reading in Portuguese versus English, yet he added that “it was good, beautiful” and he loved it. Participant AA explained: “I think I could understand good. In general, it was quite easy to read.” He also admitted that he was thinking more about his pronunciation since I was recording him. Throughout the English reading, participant H, the

most outgoing individual, frequently used signals to display confidence (or lack thereof) in regards to pronunciation such as: “I don’t remember,” “I don’t know,” and “Ah, I remember.” When asked if he felt more comfortable reading aloud to me rather than a stranger, he said that it did not matter who he read to, because he does not care if he makes mistakes, which allows others to correct him. The IPA transcriptions of certain words as well as participants’ before and after answers not only provide raw data, but also an informative glimpse into an ESL student’s mind.

Discussion

Examination of Phonological Problems

Overall, the results of my study are congruent with previous findings. The literature and findings alike show other reasons which cause L2 English speakers “non-native” pronunciation besides a physical inability alone to articulate words correctly.

Firstly, the pronunciation of “Israel” as [ɪzɹaɪɛl] by all six participants aligns with Azevedo (1981), Schuhmann and Huffman (2014), Osborne and Simonet (2021), and Zimmer (2004). “Israel” is spelled the same in English and Portuguese. Therefore, participants likely took the explicit information in the word (the spelling), combined with the known L1 phoneme and grapheme system, then articulated the word as they knew it in Brazilian Portuguese.

Additionally, /h/ and /ɹ/ are both written as <r> in Brazilian Portuguese, which illustrates the findings of Osborne (2015). The participants had most likely not heard “Israel” in English before, so the familiar spelling may have triggered the natural L1 articulation.

Next, the pronunciation of “lonely” as [lɒnəli] could have a couple of explanations. Firstly, the insertion of the schwa between the <n> and <l> is an example of vowel epenthesis. However, John and Cardoso (2017) identified vowel epenthesis as the insertion of [i] after <p>

and <k>. Although I did not notice this, the vowel added between <n> and <l> is nevertheless interesting, likely because Portuguese follows a consonant-vowel pattern. Secondly, the resulting pronunciation could be recognized as an attempt to pronounce every letter. It is possible that participants did not recognize the <e> as a silent vowel to elongate the <o> which could also explain their addition of the schwa.

The L1 Portuguese English learners' understanding of phoneme-grapheme relations proved to be most insightful. I interpreted Levelt (1989) "formulation" as participants' assumption of how the word is pronounced, based on their cognitive awareness of phoneme-grapheme relations. The various articulations of "guide," "fiercely," "numerous," and "refuge" could have all been rendered unintelligible to a monolingual interlocutor. The first three words contain digraphs that are likely uncommon in Portuguese, or at minimum, are pronounced differently. A couple of pronunciations of "guide" treated <u> as an approximant, when in fact, in combination with <i>, it is simply /aɪ/. Surprisingly, participants did not pronounce the final consonant in "refuge" as /dʒ/, as anticipated from Silveira (2009). Participant T treated the <i> in "fiercely" as the same as the <i> in "find." Instead of recognizing that <ie> is pronounced as /i/, she may have generalized and misapplied her understanding of English <i> pronunciation. The pronunciations of "numerous" from five of the six participants as /nəmɜːɪs/ align with Kivistö-de Souza (2017) who found that English /i-ɪ/ and /u-ʊ/ is just represented as /i/ and /u/ in Brazilian Portuguese. Though I was surprised that "refuge" was not pronounced with a glottal /h/ or velar fricative /x/ for the first consonant as found in Cristófaró Silva (2007), other graphemes proved difficult. The final consonant sound was pronounced either as /ʒ/ or /g/. The first articulation shows the phonological awareness that "refuge" must end with a fricative, but the participants failed to include /d/ before. The second articulation type treated <g> the same as it is pronounced

in “go.” Erdener and Burnham (2005) identification of English as an opaque language with confusing spelling and multiple graphemes for one phoneme explain ELL’s phoneme-grapheme understanding and misconceptions.

Lastly, I attribute the difficulty of three words to their length, and lack of commonality in the ESL classroom. Also, these words show an error in conceptualization, which I define from Levelt (1989) as the participants’ initial reaction to the words they read, derived from their L1, the spelling of the word, and the commonality of the word in the English language.

“Traacherous,” “descendants,” and “uprightness” all seem to be from a holy text or advanced novel- not in an ESL curriculum. My study aligns with Lightbrown and Spada (2013) recognition of infrequently seen, heard, or understood words to intimidate or confuse language learners. Participant T took one confident, yet unintelligible attempt at “treacherous,” while missing key phonemes: [titʃɛɪs]. Participant C made an honest attempt to pronounce every letter: [titʃɛɪʃowɛɪs], yet his articulation ended up sounding similar to “teacher showers,” which evidently changes the meaning completely. Two higher level students produced two closer, yet still inaccurate pronunciations: [titʃɛɪɔs] and [tritʃəɪɔz]. It is crucial to notice that none of these four participants attempted /tɪ/, which may not be present in Brazilian Portuguese. Next, two participants articulated “descendants” uniquely. Participant AP took four attempts: [dɔkæns], [dekadens], [dɔsɛn], and [disɛndənts]. The first two pronunciations show incorrect articulations of <desc>, yet pronunciation two was closer to a correct pronunciation of <dants>. Pronunciation three reveals an attempt to correctly produce <descen>, then pronunciation four yields intelligible, and near-native pronunciation. Participant AA produced [dɛsɛndæns], which is intelligible, but if would have tried a couple more times like AP, his pronunciation may have been closer to a native-like accent. Finally, “uprightness” proved confusing for four participants.

Participant T produced [əp.ɾe|əpnəs], which shows an attempt at <upri>, but then a rushed pronunciation which did not take all graphemes or phonemes into account. Participant C's articulation caught my attention the most: [əp.ɾiŋvətnəs]. His conceptualization of <g> shows lack of understanding that <g> can sometimes be silent or produce a phoneme other than its IPA equivalent. Participant AP articulated [əpə.ɾɪtəs] which exemplifies vowel epenthesis, and lack of regard for <n>. Participant H, who is most advanced, produced [əp.ɾɪtnəs], which only shows the wrong vowel after <r>. Being understood, even if that means having a few errors, is key for the ESL student.

Language Learner's Identity and Goals

As established across the field of linguistics and education alike, an individual's language makes up a large part of their identity. I intend to use the results of the study to increase my participants' confidence in English. The findings of this study may improve the linguistic awareness and habits of ESL students. Each language instructor and learner should contemplate if language learners should be more concerned about having perfect, native-like pronunciation, or instead correct grammar and intelligible pronunciation. Reaching native-like proficiency in an L2 is a daunting task, so a learner should focus on proper conjugations and grammar rather than striving for perfect pronunciation. At the same time, a language learner's pronunciation must be close enough to the standard articulation so interlocutors can understand, and communication takes place successfully. Errors in grammar can cause misunderstandings. However, a person can speak intelligibly to a monolingual interlocutor, even with a non-native accent. Language instructors should acknowledge and accept this reality, rather than placing unrealistic pressures on their pupils to speak perfectly. Certain students may still aim for native-like pronunciation, which enables instructors to help them progress towards that goal. This project should serve as a

reminder for teachers to ask students about their language goals. Some students may only want the key “travel basics” for study abroad, while others may desire to confidently converse about abstract topics, in a native-like accent. Language instructors should consider administering a simple qualitative or Likert scale survey at the start and end of the semester, to determine then assess each student’s goals.

Answers from the Founder of the ESL Program

The director of the ESL program connected me with my participants and gave information about his background and mission. The questions he answered are in Appendix C. He has been teaching English to Brazilians for over 30 years, since August 1980. His students are 12 to 60 years old, but half are young adults going to college. Thirty percent are adults in their 40s or above, and 20% are teenagers. Half of the students are beginners in English (classes in Portuguese and English), while 35% are intermediate (almost entirely English) and 15% are advanced (all English). His goal is to engage wealthy students to sponsor the needy ones, since 20% of students are in social class A, while 80% of students are in social class C.

The founder of the English school also identified common ways that his students struggle with attaining native-like English pronunciation. The first mistake he mentioned was the students’ application of L1 Portuguese literacy to L2 English, resulting in the pronunciation of English words as if they were Portuguese. This shows why phoneme-grapheme relations were a key point of confusion. Secondly, students fail to engage in oral activities or study outside of class because they expect that class time with a teacher alone is sufficient to obtain their English goals. From personal language instruction and learning, I can attest to this likely being the greatest hindrance to improving language proficiency. The ESL school director notes that the up-down rhythm of Portuguese combined with alternating single consonant and vowel sounds in

words differs from English. Brazilian Portuguese speakers are inclined to insert an /i/ at the end of English words which end with consonants such as “hot” to “hotty” and “dog” to “doggy.” This is an example of vowel epenthesis. Next, graphemes <t> and <d> are not pronounced the same in the two languages, so L1 pronunciation is transposed to the L2, yielding in <t> turning to /tʃ/ and <d> turning to /dʒ/, which confirms Silveira (2009) findings.

Over the years, he has developed strategies to help students overcome these obstacles. His curriculum is not heavily focused on reading, but instead listening to dialogues with pictures and actions. Students build understanding from what they see, hear, and feel rather than what they read. This could be one reason why performing a lengthy, complex English read-aloud was uncomfortable. Students are encouraged to speak as often and as naturally as possible, which means that they are not always corrected. Excessive correction, especially from teachers who are native English speakers, is only intimidating to students. Understanding should be based on seeing and hearing, with application to real life situations. Students gain hypothetical experience with ordering food, booking a hotel room, making a bank transaction, and more which all equip them for practical usage of English.

I have a few suggestions for passionate ESL students seeking to attain native-like pronunciation. Firstly, I suggest heavy consumption of movies and videos in the target language. YouTube allows altered playback speeds and a free Google Chrome extension that changes video speeds in increments of 10%. English learners should try listening to authentic conversations or informational videos (such as travel vlogs) on Youtube at a speed of 50% to 100% depending on their proficiency level. They can also try recording themselves speaking along with the video, and then listening for variations in pronunciation. ESL students would also benefit from networking with one or more native English speakers. The language partner can provide

conversational practice and pronunciations of unfamiliar words. Correct repetition of challenging phonemes and words can also solidify native-like pronunciation. Lastly, ESL students should have an attitude like Participant H, whose willingness to converse to learn and be corrected drove his English usage, rather than his fear of making mistakes.

Limitations and Future Studies

Besides surveying the current literature, the most laborious aspect of my project was the production of IPA transcriptions, and the selection of words to highlight for this study. My participants all produced many intriguing pronunciations that this study could not cover. Time and resources were the two key limitations of this project. Additionally, my perception of native-like accent is from Michigan. Future studies similar to mine may emphasize stress patterns in articulations, utilize a larger group of participants, test pronunciation techniques, and highlight a greater quantity of words uniquely pronounced.

Conclusion

Portuguese speakers learning English develop a new range of capabilities including visual processing of words, phonemic awareness, and pronunciation strategies. Since English and Portuguese do vary in aspects such as phoneme-grapheme relations, spelling, and nasals, English learners will make mistakes in their learning journey. Interlanguage and L1 influence, vowel epenthesis, and phoneme-grapheme understanding are three key areas among others that can be analyzed to determine the native-like pronunciation of a Brazilian English learner. Language attitudes, academic background, and age that English studies begin can all influence a person's proficiency or accuracy of pronunciation in Standard American English. The most desirable and necessary trait of an English learner is a willing attitude to make mistakes, yet keep persevering and seeking to improve. This study focused on common phonetic speech variations of L1

Portuguese speakers learning English. These variations occurred due to L1 influence, vowel epenthesis, phoneme-grapheme conceptualization, and complexity of words in the passage.

Language learners and instructors should consider if intelligibility or a native-like accent is the goal.

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Table 1: Background characteristics of participants (adapted from Baptista 2006)

ACTFL levels are determined by participants' ability to hold a verbal conversation with the researcher.

Identifier	Sex	Age	ACTFL Level
T	F	35	Intermediate Mid
C	M	28	Intermediate Mid
AP	M	18	Novice High
AA	M	15	Advanced High
P	M	18	Novice High
H	M	48	Superior

Table 2: Summary of Findings

Error Type	Word	Pronunciation(s)	Participants
L1 Influence	Israel	[ɪzhaɪɛl], [ɪzhaɪɛl], [ɪzhaɪɛl], [ɪzhaɪɛl], [ɪzhaɪɛl], [ɪzhaɪɛl]	T, C, AP, AA, PA, H
Vowel Epenthesis	lonely	[lonəli], [lonəli]	T, H
Phoneme-Grapheme; Formulation	guide	[ɡɪd], [ɡwid, gid], [ɡwid]	T, C, AP
Phoneme-Grapheme; Formulation	fiercely	[faɪɹɪsɪli]	T
Phoneme-Grapheme; Formulation	numerous	[nəmɜːɪs], [nəmɜːɪs], [nəmɜːɪs], [nəmɜːɪs], [nəmɜːɪs]	T, C, AA, PA, H
Phoneme-Grapheme; Formulation	refuge	[ɹɛfuz], [ɹɛfuz], [ɹɛfug], [ɹɛfuz]	T, C, AP, PA,
Longer word; Conceptualization	treacherous	[tɪtʃɛɹɪs], [tɪtʃɛɹɪfowəɹɪs], [tɪtʃɛɹɪs], [trɪtʃɛɹɪɔz]	T, C, AA, H
Longer word; Conceptualization	descendants	[dɛkæns, dɛkɛdɛns, dɛsɛn, dɪsɛndənts], [dɛsɛndæns]	AP, AA
Longer word; Conceptualization	uprightness	[əpɹɛ əpnɛs], [əpɹɪŋvɔtnɛs], [əpɹɪntəs], [əpɹɪtnɛs]	T, C, AP, H

Table 3: Frequency of Nonstandard Pronunciations Involving <h> or <r>

Participant	Ratio of words uniquely pronounced with <h> or <r>	
T	10/17	59%
C	29/45	64%
AP	16/24	67%
AA	7/10	70%
PA	10/14	71%
H	12/16	75%

Appendix A

PORTUGUESE-Salmo 25

Davídico.

1 A ti, Senhor, elevo a minha alma.

2 Em ti confio, ó meu Deus.

Não deixes que eu seja humilhado,
nem que os meus inimigos triunfem sobre mim!

3 Nenhum dos que esperam em ti
ficará decepcionado;
decepcionados ficarão
aqueles que, sem motivo, agem traiçoeiramente.

4 Mostra-me, Senhor, os teus caminhos,
ensina-me as tuas veredas;
5 guia-me com a tua verdade e ensina-me,
pois tu és Deus, meu Salvador,
e a minha esperança está em ti o tempo todo.

6 Lembra-te, Senhor,
da tua compaixão e da tua misericórdia,
que tens mostrado desde a antiguidade.
7 Não te lumbres dos pecados e transgressões
da minha juventude;
conforme a tua misericórdia, lembra-te de mim,
pois tu, Senhor, és bom.

8 Bom e justo é o Senhor;
por isso mostra o caminho aos pecadores.

9 Conduz os humildes na justiça
e lhes ensina o seu caminho.

10 Todos os caminhos do Senhor
são amor e fidelidade
para com os que cumprem
os preceitos da sua aliança.

11 Por amor do teu nome, Senhor,
Perdoa o meu pecado, que é tão grande!

12 Quem é o homem que teme o Senhor?
Ele o instruirá no caminho que deve seguir.

13 Viverá em prosperidade,
e os seus descendentes herdarão a terra.

14 O Senhor confia os seus segredos

aos que o temem,
e os leva a conhecer a sua aliança.
15 Os meus olhos estão sempre voltados
para o Senhor,
pois só ele tira os meus pés da armadilha.

16 Volta-te para mim e tem misericórdia de mim,
pois estou só e aflito.
17 As angústias do meu coração se multiplicaram;
liberta-me da minha aflição.
18 Olha para a minha tribulação
e o meu sofrimento,
e perdoa todos os meus pecados.
19 Vê como aumentaram os meus inimigos
e com que fúria me odeiam!
20 Guarda a minha vida e livra-me!
Não me deixes decepcionado,
pois eu me refugio em ti.
21 Que a integridade e a retidão me protejam,
porque a minha esperança está em ti.

22 Ó Deus, liberta Israel de todas as suas aflições!

ENGLISH- Psalm 25

Of David.

1 In you, Lord my God,
I put my trust.

2 I trust in you;
do not let me be put to shame,
nor let my enemies triumph over me.

3 No one who hopes in you
will ever be put to shame,
but shame will come on those
who are treacherous without cause.

4 Show me your ways, Lord,
Teach me your paths.

5 Guide me in your truth and teach me,
for you are God my Savior,

- and my hope is in you all day long.
- 6 Remember, Lord, your great mercy and love,
for they are from of old.
- 7 Do not remember the sins of my youth
and my rebellious ways;
according to your love remember me,
for you, Lord, are good.
- 8 Good and upright is the Lord;
Therefore he instructs sinners in his ways.
- 9 He guides the humble in what is right
and teaches them his way.
- 10 All the ways of the Lord are loving and faithful
toward those who keep the demands of his covenant.
- 11 For the sake of your name, Lord,
forgive my iniquity, though it is great.
- 12 Who, then, are those who fear the Lord?
He will instruct them in the ways they should choose.
- 13 They will spend their days in prosperity,
and their descendants will inherit the land.
- 14 The Lord confides in those who fear him;
He makes his covenant known to them.
- 15 My eyes are ever on the Lord,
for only he will release my feet from the snare.
- 16 Turn to me and be gracious to me,
for I am lonely and afflicted.
- 17 Relieve the troubles of my heart
and free me from my anguish.
- 18 Look on my affliction and my distress
and take away all my sins.
- 19 See how numerous are my enemies
and how fiercely they hate me!
- 20 Guard my life and rescue me;
do not let me be put to shame,
for I take refuge in you.
- 21 May integrity and uprightness protect me,
because my hope, Lord, is in you.

22 Deliver Israel, O God,
from all their troubles!

Appendix B

Questions for Participants

1. Could you please tell me how old you are?
2. How many years have you been studying English?
3. Were those formal classes in school?
4. How long have you received classes from J. (the ESL School founder)?

Read aloud...

5. How did it feel to read out loud?
6. What did you like or dislike about this project?
7. Were you thinking more about your pronunciation (how you speak) than you normally would?

Appendix C

Questions for the Founder of the ESL Program

1. How many years have you been teaching English?
2. What is the demographic, age, and ability of your students? You can be somewhat general with your answer.
3. What are some common struggles you notice in your students in terms of attaining native-like English pronunciation? Please give as many examples as possible(:
4. How have you helped them to overcome those obstacles?