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**UNDERSTANDING DIFFICULTIES CONCERNING MINIMAL PAIRS OF FRONT
MONOPHTHONG PHONEMES IN ENGLISH FOR BRAZILIAN PORTUGUESE
SPEAKERS**

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ABSTRACT

This study is related to the comparison of front monophthong phonemes in both languages, English and Brazilian Portuguese, how this difference makes it harder for a Brazilian learner to speak the English language, and how the pronunciation helps students to learn other areas of the language and increases confidence in the language. Silva (2021) provided the baseline in this monograph to understand the difference between the vowels in English and in Portuguese. This study focuses primarily the theoretical aspect concerning the structure of the sounds and how a teacher can help the student to speak or differentiate the vowels. The main focus on the vowels will be the minimal pairs /æ/ and /ɛ/; and /i:/ and /ɪ/.

Keywords: pronunciation, minimal pairs, English as a foreign language, Portuguese speakers, teaching

RESUMO

Esse texto tem como finalidade comparar os monotongos anteriores em ambas línguas, inglês e português brasileiro, como essa diferença faz com que aumente a dificuldade para o aprendiz do português brasileiro aprender a pronúncia do inglês e como a pronúncia auxilia os estudantes a aprenderem outras áreas da língua, além de aumentar a confiança dos alunos. Silva (2021) é a base para esta pesquisa para entender a diferença entre as vogais do inglês e do português. Trata-se um estudo teórico concernente à estrutura dos sons e como o professor consegue ajudar discentes a pronunciar e diferenciar os sons das vogais. O foco principal será voltado para os pares mínimos /æ/ e /ɛ/; e /i/ e /ɪ/.

Palavras-chave: Pronúncia. Pares mínimos. Inglês. Falantes de português. Ensino.

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1. INTRODUCTION

The following text has as its goal to understand the difficulties of Brazilian Portuguese native speakers who want to learn English as a Second Language (ESL). In this context, a phonological analysis will be carried out about the most problematic minimal pairs in vowels: the front monophthong phonemes /ɛ/ and /æ/; and /i:/ and /ɪ/. In addition, this paper aims to explore the difficulties Brazilian Portuguese speakers present when learning to differentiate these sounds. Those sounds are harder for the learners because the sound that is similar in Portuguese, is in between the English sounds. In this way, the book “Pronúncia do Inglês para os Falantes do Português Brasileiro”, by Silva (2021) will be used to understand the English pronunciation compared to the Brazilian and sounds that are almost the same sounds in English. Throughout the text, the description of the sounds will follow the international phonetics alphabet (IPA).

Therefore, this monograph dwells in a theoretical point of view, using what has been proved that works. As De Godoy et al. (2006) explained, one needs to listen to a language in order to speak it, and also question the reader if we would be able to speak their native language if one had not listened to it enough. Under this analysis, students need to listen to the language with a certain frequency in order to learn it properly.

Words that can be differentiated by only one sound are called minimal pairs, which can be explained by Roberto (2016) as a pair of words that can be differentiated by one phoneme, and especially with the vowel sounds. These sounds are harder for Brazilians to pronounce and differentiate when they are being said, such as “feet ” and “fit”, and “sleep” and “slip.” The same can be perceived with consonants, but the focus on this text will solely be vowels sounds, especially the /æ/ and /ɛ/; and /i:/ and /ɪ/. These four phonemes comprise the front monophthongs typically used in English. Since /ɛ/ and /e/ are allophones in English, they will be treated as one throughout this monograph.

2. THE IMPORTANCE OF PRONUNCIATION

When discussing the importance of pronunciation in language learning, it is contradictory to think that this skill is often less studied than others, because of its difficulty to research, since everyone speaks or because it is hard to approach it with the students, as they can be very shy and feel like they are being judged by the teachers, although there are some reasons why this should be taught in a foreign language classroom. It increases learners' confidence on speaking, as well as international intelligibility. Students who do not feel confident in their speaking skills are "less willing to take part in speaking tasks" (Walker, 2021, p. 11), which can be very tricky for students that need or want to improve that skill.

One considerable aspect that helps students learn pronunciation regards how old they are. Age is very important when acquiring a language accent because the phonological system can be completely formatted around the end of the pre-teen years. According to Çakir (2014, p. 99), in the Critical Period Hypothesis, "learners have the disadvantages of starting to learn at late ages especially after puberty for a first language." Thus, young learners tend to learn the pronunciation much faster and in an easier way. Fragozo (2022) explained that, after that period, one becomes somewhat "deaf" to certain sounds to which they are not used to listening in their mother tongue. This can be hard for Brazilian students learning English, because their sound differences, such as /θ/ and /ð/, do not exist in Brazilian Portuguese, and especially the differences in vowels. However, this does not mean that adults cannot learn new phonemes; it only means they may present more difficulty and may need extra help to learn these sounds. They may no longer observe them "by ear" on their own, so they will require clearer instructions on the positions and tenseness of the articulators, i.e. lips and different parts of the tongue.

Another thing that can be difficult for students is the option for a given style of pronunciation as a reference. When one teaches another language, one comes across such statements as: “I want to speak with a British accent”, or an American accent, but the accent the speaker has is related to the content they consume and practice. Learners should be able to be understood by people from all over the world, focusing on intelligibility and accuracy, not in trying to sound like a native speaker, which is unlikely to happen.

Walker (2021) explains that “[i]ntelligibility refers to how a listener can identify the individual words or phrases that a speaker produces”, but not only intelligibility has to be the focus — comprehensibility as well. Walker (2021) refers to comprehensibility as the effort the listener needs to put into the conversation to understand what the speaker is trying to say. Even if the speaker uses clear enunciation, with accurate pronunciation, communication may be broken if the listener lacks the necessary listening skills, which often stem from not knowing the accurate pronunciation for the words they hear.

When learners have confidence in their pronunciation, their listening skill is also improved, by the “bottom-up processing, which involves decoding the individual phrases, words, and sounds that learners hear”. (WALKER, 2021, p. 11) This may force students to rely on the phonological components of their hearing to understand the message. In that manner, it helps the learner decode the words to better understand the sounds; when one can produce the sound, one can differentiate as they hear such sounds further on as well.

Accurate pronunciation also helps students keep more vocabulary, as “words that we meet are processed in working memory using what is known as the phonological loop.” (Walker, 2021, p. 11) This phonological loop is also called the ‘inner voice’, in which we repeat the new information we learn to turn it into a long-term memory. As Walker (2021) explained, most researchers agree that accurate pronunciation assists in the phonological loop and prepares new vocabulary to be stored in long-term memory.

Furthermore, reading skills can be developed with pronunciation, considering the way the words are processed in the human mind and memory. In the human mind, reading is about “decoding written words by and matching sounds to the letters or letter combinations on the page.” (Walker, 2021, p. 11) In some cases, there are some letter combinations for which knowing the sounds may help to make the reading more fluid, for instance, the ‘ea’ as in ‘head’, or as in ‘break’. In English, pronunciation while reading is not an option not to learn, because the English spelling, especially for vowels, can be rather unpredictable; so, in order to acquire better fluency while reading, it is important to know the words and their pronunciation. In sum, “[b]eing understood in a language is much more important than sounding like a native speaker.” (Walker, 2021, p. 14)

3. HOW TO TEACH PRONUNCIATION

In order to understand how to teach pronunciation, it is important to explain a notion of accurate pronunciation. Although ESL/EFL approaches may seem to assume that a good pronunciation is as close to a so-called native speaker as possible, that is actually not quite feasible. The aim should be international intelligibility. Therefore, good pronunciation, as Walker (2021) explained, is the pronunciation that is comfortably intelligible to the listener.

Regarding pronunciation teaching, it is important for teachers to know their students. In this paper, the focus is on Brazilian learners, although they can be at any age. As for the teachers themselves, it can be helpful if English is not their first language, as they can then relate to students' difficulties and explain, by their own examples, how they have overcome such hardships. Consequently, how to teach depends on the teacher, where they are teaching, and who the learners are.

First of all, it is crucial to explain to students the need to learn accurate pronunciation, and they need to understand how the way in which a word is pronounced may interfere with proper communication. One may think that many students, especially the younger ones, tend to underestimate the importance of learning to speak properly; and the older ones usually think they are too old to learn it. So working on minimal pairs helps students to differentiate between the most problematic sounds, such as /æ/ versus /ɛ/ (e.g. "sat" and "set"), and /i:/ versus /ɪ/ (e.g. "seat" and "sit").

One way the sounds of words can be taught is by lexical chunks: those chunks can help with the pronunciation, with some details such as consonant clusters, fluency, and vocabulary. Students will want to learn what the words mean separately and this may also help with vocabulary, and even the sentence itself.

The teacher can also help students to identify the difference between minimal pairs, especially the most problematic sounds; doing so will help the learner to be able to identify it

when listening, making it easier to speak to. As Walker (2021) explained, working on the targeted pronunciation can help the student to understand the weak forms of the words.

Helping the student with the pronunciation — before a text, for example — will make it easier for the learner to read the text with more fluency, and they will stop less to check vocabulary. This kind of mistake may be very distracting during speaking activities.

4. VOWELS IN BRAZILIAN PORTUGUESE

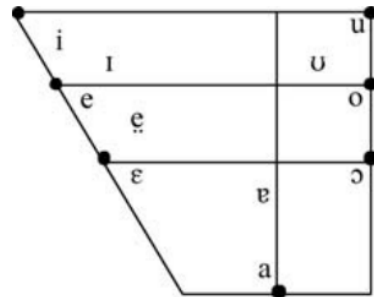
Before we can compare the vowels in both languages, it is important to analyze the vowels separately in each language. In Portuguese, as Barbosa (2004) explained that “Portuguese phonemically contrasts seven oral vowels in stressed position: /i e E a O o u/, there is a phonetic contrast of five nasalized allophones in stressed position before the archiphoneme /N/.” Barbosa (2004) refers to the nasal coda as “phoneme /N/”, which is used to nasalize the vowels in Brazilian Portuguese, as contextualized by Barbosa (2004), “The archiphoneme /N/, in words such as *canta* /kaNta/ ‘(s/he) sings’ or *irmã* /iR’maN/ ‘sister’, triggers the nasalization of a preceding vowel.”

In Brazilian Portuguese, there are a total of seven oral monophthongs and five nasalized monophthongs, but these latter ones are not going to be cited in this text, since they do not have relations with the English vowels. “This yields a total of twelve contrasting vowels in stressed position.” (Barbosa, 2004, p. 229). It is important to mention that, in Portuguese phonology, diphthongs are not considered to be single long vowels as in English, but rather sequences of vowel sounds.

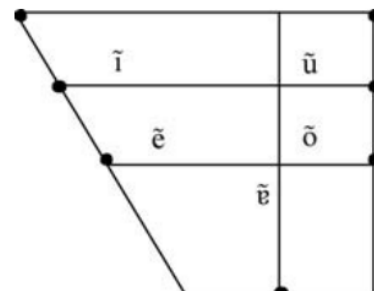
Yet, when it is in a pre-stressed position, in Portuguese there are a total of ten vowel phonetic contrasts, “where the quality of the corresponding stressed vowel is roughly preserved” (Barbosa, 2004, p. 229). In the post-stressed position, there are four oral vowels, including a centralized version of [e]. “Even though minimal pairs cannot be found.” (Barbosa, 2004, p. 230). Table 1 shows the Brazilian Portuguese vowels and some examples of how they are used.

Table 1: Brazilian vowel phonetic alphabet.**Vowels**

i	siku	sico	'chigoe'
e	sekũ	seco	'dry'
ɛ	sɛkũ	seco	'(I) dry'
a	sakũ	saco	'bag'
ɔ	sɔkũ	soco	'(I) hit'
o	sokũ	soco	'hit (noun)'
u	sukũ	suco	'juice'
(i)	sakt	saque	'withdrawal'
(ɛ̃)	'nũmɛrũ	nũmero	'number'
(ɐ)	sakɐ	saca	'sack'
(u)	sakũ	saco	'bag'

**Nasalised vowels**

(ĩ)	sĩ ⁿ tu	cinto	'belt'
(ẽ)	sẽ ⁿ tu	sentu	'(I) sit'
(ẽ̃)	sẽ̃ ⁿ tu	santu	'saint'
(õ)	sõ ⁿ du	sondu	'(I) probe'
(ũ)	sũ ⁿ tu	suntu	'summed up'



Source: Barbosa (2004, p. 229).

Another thing that can be very hard for Brazilian speakers is the fact that, in Brazilian Portuguese, it is common to use an epenthetic vowel, which takes places when a language does not accept the syllable to be finished by a consonant, thus adding the vowel /i/ or /ɨ/. This characteristic makes it somewhat harder to be able to properly speak different languages.

One problem that Brazilians tend to have when speaking English is the differentiation between /L/ and /ʊ/, when it is positioned at the end of a syllable. Some states in Brazil use the sound /ʊ/ for both letters "L" and "U", while the same difference is not seen in English, which can be hard for a Brazilian speaker.

The archiphoneme /L/, which used to be a velarized lateral approximant for some generations ago, is changing into a labial-velar approximant throughout the entire Brazilian territory, producing homophones such as *mau* /maʊ/ 'bad' and *mal* /maʊ/ 'evil'. (BARBOSA,

2004, p. 229). In both English and Portuguese, the “light L” /l/ typically before vowels. In most styles of English, the letter “l” is normally pronounced at the end of syllables with the post-alveolar “light L” /ɫ/, which is found in European Portuguese, but not in Brazilian Portuguese. It would be acceptable for Brazilian learners to use the alveolar “light L” for both situations, since there are few less common styles of English that use that sound for all positions in the syllable; they may be rather unusual, but clearly intelligible; however, since the “light L” /l/ does not usually take place at the end of syllables in Portuguese either, a problem arises when students use a semivowel sound /w/ instead, so they may tend to pronounce “bow” and “bowl” identically (omitting the /ɫ/ and the end of the latter), for instance. Explaining that such consonants are not replaceable with vowel or semivowel phonemes may be of great help when teaching Brazilian students English pronunciation. Yet, although certain English consonants may often present challenges for Brazilian learners, some vowels are often found to be more challenging (De Godoy et al, 2006; Silva, 2021), which leads us to the main focus of this study.

5. VOWELS IN ENGLISH

Differently from Brazilian Portuguese, English vowels can be separated by long and short vowels; this separation can be expressed by the duration of each sound. Short vowels are only relatively short; vowels can have quite different lengths in different contexts (Roach, 1991). In English there are twelve monophthongs, of which five are long and seven are short, also including the schwa /ə/.

Long vowels can be represented by a colon (:) after the international phonetic alphabet (IPA) representation, as in words like sheep, which can be spoken as /ʃi:p/, and ship /ʃɪp/ — they are usually differentiated because of the long vowel.

As Roach (1991) explained, the other short vowel is the schwa /ə/, a very common sound in English: it is the “basic” sound in English, the most relaxed sound in the language. It is heard in the first syllable of the words "about" and "oppose"; in non-rhotic accents (i.e. those where letter “r” is only pronounced before vowels, not at the end of words or before consonants), in the first syllable of "perhaps", etc.

Silva (2021, p. 32) presents the following Table to explain the vowels in English, divided by the position of the tongue, the roundness of the lips, and the length of the vowel:

Table 2: English vowel phonetic alphabet.

12 VOGAIS	anterior		central		posterior	
	<i>não arredondada</i>		<i>não arredondada</i>		<i>arredondada</i>	
	<i>longa</i>	<i>breve</i>	<i>longa</i>	<i>breve</i>	<i>longa</i>	<i>breve</i>
alta	i:	ɪ			u:	ʊ
média		ɛ	ɜ:	ʌ , ə	ɔ:	ɔ
baixa		æ	a:			

Source: SILVA (2021, p. 32).

As shown in Table 2 above, it is possible to divide English vowels regarding their lengths: short and long vowels; however, other ways of telling them apart can also be useful for teachers of English as a second or foreign language. One distinction concerns whether the vowel is constant – i.e. a monophthong – or whether it shifts during its pronunciation – i.e. a diphthong. When discussing front vowels, articulating the tip of the tongue in the front section of the mouth, the high monophthongs used in English are the long tense /i:/ and the short lax /ɪ/. In most North American accents, the mid tense short monophthong is /ɛ/, while in most British accents it would be the slightly higher /e/. English also features the tense low front vowel /æ/, for which the length may vary. De Godoy et al. (2006) further explain that, while one can tell these by length, the most noticeable difference in pronunciation is actually their tenseness, since those lengths may present variations in certain styles of English. Therefore, specifying the tenseness of these monophthongs and whether lips are stretched or lax may be a better starting point. Monophthongs can be short or long, while diphthongs are naturally long, since they shift from one vowel sound into another. De Godoy et al. (2006) mention that English diphthongs are rather easy for speakers of Portuguese, since their native language presents similar sounds; the difficulty lies more in telling apart lax and tense counterparts, on which this monograph dwells.

Central and back vowels may also present some difficulty for learners, as well as other phonemes, but they would go beyond the scope of this monograph and may present lesser degrees of difficulty for speakers of Brazilian Portuguese (De Godoy et al., 2006; Silva, 2021), so front monophthongs in English will comprise the main focus of this study.

6. MINIMAL PAIR /æ/ AND /ɛ/

The first minimal pair that is going to be studied is /æ/ vs. /ɛ/. Many learners do not seem to be able to notice the difference between them, especially when a non-native speaker is saying it.

Those sounds are common in words such as “man” /mæn/ and “men” /mɛn/. Such words can be very hard for a learner to understand and differentiate its meaning.

Portuguese has a difference between "é" [ɛ] and "ê" [e]. These two are allophones in English, i.e. they are interchangeable in English. "Men" can be pronounced /mɛn/ (US) or /mɛn/ (UK), with either one of those vowels. However, "man" /mæn/ has a vowel not found in Portuguese at all. This causes some confusions for speakers of Portuguese when using those mid and low front vowels in English. One way to go around this issue is to help them understand that /æ/ makes the mouth open more than /ɛ/. As De Godoy et al. (2006) explained: to produce these English sounds, one may follow these steps: “Say é in Portuguese. Then close your lips and you will pronounce /ɛ/. Now, open your mouth to say *a* in Portuguese but don’t say *a*, say é. That’s the /æ/ sound.” (De Godoy et al., 2006, p. 178)

Its pronunciation can be predicted in some cases; for example: the letter *e* in initial position is usually pronounced as /ɛ/ “in words with more than one syllable if the *e* is stressed and followed by a consonant.” (De Godoy et al., 2006) When /æ/ comes in the beginning of a word, usually written with the letter *a*, in a British style of pronunciation, it may be pronounced /ɑ:/.

There are a few ways to differentiate those sounds: one of the ways is to listen to it more frequently and get used to them; another possibility is to look at the speaker's mouth while they are speaking, because, if they open their mouth wider, they are pronouncing /æ/. Students could, for example, practice “mouthing” words, with no sound, to one another, working in pairs, and try to guess, from the position of the lips, whether their partner said

“vat” or “vet”; “pat” or “pet”, “pan” or “pen”, “tan” or “ten”, and other similar minimal pairs with /æ/ vs. /ɛ/.

Another possible exercise is to have students start a story, orally, so the next student should continue. Such minimal pairs can be written on the board, so students will have to choose one and the next will continue the story, which will make sense or not depending on whether the sounds had been pronounced correctly. For example: one student says: “I saw the vat in the barn.” If the next student says: “the vet examined the chickens”, the teacher will be able to state the previous sentence had “vat”, not “vet.”

7. MINIMAL PAIR /i:/ AND /ɪ/

The second minimal pairs are /i:/ and /ɪ/, which can be harder for Brazilians to differentiate, because the Portuguese /i/ is between /i:/ and /ɪ/, so “many Brazilians don’t differentiate the two sounds [and they] pronounce *seat* and *sit* the same way, for instance.” (De Godoy et al., 2006) It can be difficult for the listener to understand if the sounds are similar or equal for both words.

To differentiate those sounds, more than just the duration, the first one (/i:/) is longer than the other (/ɪ/). The articulation is also different: one is higher than the other; therefore, when pronouncing words with /i:/, the jaw is higher compared to /ɪ/, which makes the jaw go slightly down. That makes it possible to notice that the tongue in /i:/ is higher too. As De Godoy et al. (2006) explained, “the height causes the tongue to go up and the lips to spread more, yielding a tenser sound.” That is the reason why people say “cheese” when taking a picture: it spreads the lips in order to create a smile; the muscle is tense. And “when you relax your muscles and your mouth goes back to a more neutral position, then you articulate /ɪ/.” (De Godoy et al., 2006)

When pronouncing the sound /ɪ/, our muscles are more relaxed, therefore we do not “smile”, and the sound is also shorter, which can be similar to the Portuguese sound “ê”, than to the sound “i” in Portuguese, though when pronouncing the sound “ê”, the mouth is even more open than the /ɪ/ sound.

It is also possible to identify the pronunciation by its spelling. De Godoy et al. (2006) highlighted that “while /i:/ can have many different spellings, /ɪ/ is much easier to identify. It’s usually: C i C = consonant + i + consonant.” Typically, when it is written with “ee” and “ea”, the pronunciation will be with /i:/ in most cases.

This can be practiced in class with similar exercises with those presented in the previous chapter, such as “mouthing” words to each other in pairs, or making stories orally,

one student saying one sentence at a time, following cues written on the board, now focusing on /i:/ and /ɪ/, for instance: “fit” and “feet”, “sin” and “scene”, “fist” and “feast”, “pitch” and “peach”, “pit” and “Pete”, “sick” and “seek”, “wick” and “weak”, “lick” and “leak.”

8. FINAL CONSIDERATIONS

In an attempt to identify some difficulties in speaking English as a native speaker of Brazilian Portuguese, this paper focused more on minimal pairs in vowels, the ones that usually are the most problematic ones, and can cause more intelligibility problems by mispronouncing them.

Mispronunciation, as De Godoy et al. (2006) explained, is the distortion of the pronunciation of certain phonemes, causing the whole word to sound like a different one, or simply making it incomprehensible for the listener, which may bring about communication breakdowns. Because of this, the main goal should be to be understood. The learner should be more worried about intelligibility and being able to identify what the speaker is saying than to truly be focusing on each sound that is made to speak.

Learners should understand that the pronunciation improvement may only be possible with intentional effort. The teacher can help, but it is only going to enhance the pronunciation based on their motivation and exposure to the language. The more one consumes and listens to the language, the better one's pronunciation will become, getting used to differentiating less familiar sounds.

It is important to highlight that language learning is a process. It will take time and motivation from the learner. Furthermore, it may help to explain that “studying pronunciation significantly influences the way you understand spoken English. Listening and pronunciation form a two-way street.” (De Godoy et al., 2006, p.22)

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