Adding some Color to Pronunciation—or Can Non-Native Speakers Learn to Pronounce the Colored Vowels [ɚ] and [ɝ] After One Phonology Activity?

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Contents

Abstract

The students in this study were asked to perform two activities in which they had to record themselves. In between both podcasts**,** the pupils were given some input on the pronunciation of the phonemes [ɚ] and [ɝ] and were asked to carry out a phonetics activity. This was done to see whether they would assimilate these sounds immediately after the pronunciation activity. All the words pronounced correctly or incorrectly with [ɚ] or [ɝ] have been jotted down so as to have the necessary data and statistics for the analysis. This has been approached through both a quantitative and a qualitative analysis, for statistics are taken from the data to be interpreted afterwards. Thus, this dissertation combs through the pronunciation improvements some students have experienced from the first podcast to the second one, which in some cases challenge perspectives like the Critical Period Hypothesis (CPH).

Keywords: podcasting, pronunciation, [ɚ], [ɝ], immediate assimilation, CPH

Resumen

Para este estudio se pidió a los alumnos que realizaran dos actividades en las que se tenían que grabar. Entre ambas grabaciones, se les dio input sobre la pronunciación de los fonemas [ɚ] y [ɝ], seguido por una actividad basada en dichos sonidos, con el fin de ver si los estudiantes asimilarían o no esos fonemas inmediatamente después de la actividad de pronunciación. Todas las palabras pronunciadas tanto correcta como incorrectamente se han apuntado para así tener los datos y las estadísticas necesarias para el análisis. Esto a su vez se ha estudiado tanto cuantitativa como cualitativamente, pues se extraen estadísticas a partir de los datos y después éstos son interpretados. La intención de este análisis es por ende investigar las mejoras que han experimentado algunos alumnos del primer podcast al segundo, que en algunos casos desafían perspectivas como la Hipótesis del periodo crítico.

Palabras clave: podcasting, pronunciación, [ɚ], [ɝ], asimilación inmediata, Hipótesis del periodo crítico

1. Introduction

Whoever wants to explore the world of pronunciation and especially its learning process will realize that the scarce literature tackling this topic is rather vague and its accuracy is usually affected by the lack of support from other studies. This had a higher impact in the 20th century, when pronunciation teaching was generally underestimated due to theories like the Critical Period Hypothesis, overshadowing the individual's learning agency to nurture pronunciation proficiency (Torres Águila, 2005, p. 5). However, some researchers have challenged this perspective and proposed other theories around this issue, defending that one can learn to pronounce a target language and sound like a native speaker even after the critical period (Krashen, 1979 cited in Lozano, 2005, p. 6).

This dissertation aims to answer the question "Can non-native speakers learn to pronounce the colored vowels [ɚ] and [ɝ] after one phonology activity?" To do this, this paper has compared the performance of two activities which the students carried out and in which they recorded themselves so as to analyze the extent to what the pupils have improved right after receiving phonetic input. This paper is therefore relevant in that it explores the ability of the students to produce immediately right after a pronunciation activity and therefore sheds light on the process of pronunciation learning, a topic which importance is gradually increasing (Jenkins, 2004, p. 11). Should the results indicate a progress in the pupils' pronunciation, these could imply that it is possible to teach pronunciation even within a short period of time, at least to some types of students. Simultaneously, this could imply that in the long run the students could assimilate the sounds taught proficiently and achieve a native-like accent.

1.1. Context

The activities to be analyzed took place between May 12 and 22, being held in three separate groups of students twice a week each. Each class lasts 2 hours and 10 minutes and groups one and two attend class on Mondays and Wednesdays, whereas the third one meets on Tuesdays and Thursdays. Hence, in this institution the alumni do not come daily since it is a language school for those who voluntarily want to learn or improve a language. The pupils performing the task are targeting a B2.1 level and each course starts with 25 students per class. Unlike most conventional schools, this institution presents a high level of diversity in that the spectra of age,

income and cultural background are genuinely varied, for language schools are not mandatory and therefore the age of the pupils ranges from 16 to 65. The third class consists of students who are actually teachers willing to improve their English so they can teach their own subjects in this language in the future.

This school's philosophy fosters a series of 21st century skills such as the students' learning autonomy and the use of the ICT in class. The former, for instance, becomes meaningful to the students in that it allows them to be able to learn on their own with the teacher scaffolding their progress, which differs from the classical model of the instructor orchestrating the alumni from a teacher-centered position. The latter, on the other hand, implies the immersion of the school into the world of technology so as to adapt to the newest generations and their necessities. Both competences intermingle successfully, for the Internet is a technology that society is gradually integrating and that can be used for personal growth and fulfillment, as it can be seen with podcasting (Rosell-Aguilar, 2009, p. 18).

2. Literature Review

2.1. What Is Podcasting?

According to Rosell-Aguilar, a podcast is "a series of regularly updated media files that can be played on a number of devices (portable and static) and are distributed over the Internet via a subscription service" (Rosell-Aguilar, 2009, p. 14). This implies some advantages when implemented into the world of education, for the product can adjust to the student's necessities. For instance, the learner can adjust the pace of a video of him or her to understand the message better (p. 18). One of the advantages could therefore be that the students have the opportunity to give richer feedback to their peers through peer assessment.

The aim of this study was initially to analyze how peer assessment on pronunciation could benefit students in future activities. However, the peers' feedback being poor, the study had to take a different focus and analyze the students' performance in two podcasts they recorded. In between, a phonetics explanation and a follow-up activity took place so as to see if the students would immediately learn to transform that input into output. Consequently, the podcasts will not be used as teaching tools in this study but as means to analyze the pronunciation changes from the first podcast to the second one.

2.2. **Contextualizing Pronunciation**

Pronunciation is a branch within linguistics that embraces both segmental and suprasegmental elements (Pennington & Richards, 1986, p. 210). The former focuses on explicit aspects such as phonology, whereas the latter consists of the projection of the rhythm of a language, its stress, and its intonation (Dickerson, 2011, p. 71). These days the focus on teaching suprasegmental elements is gaining force over the instruction of segmentals, for it is believed that intonation overrides sound projection when it comes to sounding like a native speaker (Pennington & Richards, 1986, p. 218). However, this study has paid closer attention to the pronunciation of the phonemes [ɝ] and [ɚ], despite these also being affected by suprasegmental elements such as stress. As noted by Pennington and Richards, this term "refers to the degree of effort involved in the production of individual syllables or combinations of syllables making up a word or longer utterance. For longer utterances, a combination of strong and weak syllables comprises a rhythmic pattern" (1986, p. 210). Consequently, stress pays an important role in the pronunciation of these two phonemes since [ɝ] will only be pronounced when in a stressed syllable of a relevant and therefore stressed word, [ɚ] being its counterpart for unstressed sounds. Consequently, this study has mostly focused on the segmental pronunciation of [ɝ] and [ɚ], but the nature of these two phonemes inherently requires the study of suprasegmentals, too. These two sounds are usually referred to as r-colored vowels, for they merge the vowels [ɜː] and [ə] with the [r] sound.

2.3. **Pronunciation Teaching Approaches**

The factors affecting pronunciation learning are a controversial topic. Although these days pronunciation teaching is on the rise (Jenkins, 2004, p. 11), the studies carried out so far are rather vague or contradictive, probably due to a lack of research. Some aspects in which more investigation is needed are regarding "clear specifications of the precise aspects of pronunciation being taught, precise descriptions of instructional procedures used, and valid measures of the effects, positive or negative, of the procedures used" (Pennington & Richards, 1986, p. 221). Moreover, the approaches targeting pronunciation learning are remarkably contradictive. The Critical Period Hypothesis (CPH,) which states that a non-native speaker will not be able to speak like a native speaker if they learn the language after puberty (Flege, 1987, p. 174), is challenged by newer approaches defending that the pupils older than

19 have other strengths such as having learned to learn (Torres Águila, 2005, p. 7) and criticizing that it was not clear why the puberty was the end of the epitome of the neuronal skills of the student to acquire pronunciation (Flege, Munro, & MacKay, 1995, p. 3133).

Owing to these discrepancies within the spectrum of pronunciation teaching, it is not easy to take an unbiased stance. Nevertheless, this study considers these two sides of the spectrum in order to adopt a richer gaze. Furthermore, it is worth pointing out that most teachers do not have the sources or knowledge to teach pronunciation to older students through strategies like teaching phonology (Dickerson, 2011, p. 92), which impedes the possibility for the alumni to reach a native-like accent (Torres Águila, 2005, p. 7).

2.4. **Discussing the Critical Period Hypothesis**

Up until the 1960s, researchers believed that there was a critical period for learning a language (Levis, 2005, p. 370). This gaze defends that the time span from birth to the age of five is pivotal for the acquisition of the pronunciation of a language since after this age the individual starts a process of brain lateralization, implying the loss of neuronal plasticity and consequently of the capability to perceive and project new sounds, culminating at the age of 19 (Lozano, 2005, p. 2). One of the first individuals to challenge this perspective was Krashen, who considered the CPH to overlook other aspects and strategies key to pronunciation learning (p. 5). These different perspectives have sparked controversy in the field of pronunciation teaching in that some studies still support the CPH, whereas others oppose to it.

A study by Flege, Munro and MacKay, for example, states that the age in which a group of Italians started to learned English turned out to be a distinguishing factor for the students' performance as regarded their pronunciation since none of the students after the age of 15 sounded native, whereas a significant group below the age of 15 did (1995, p. 3133). However, what this analysis does not evidence is the learning strategies the alumni had been taught so as to speak like native speakers. Thus, one could think that the middle ground between these two extremes could lie in the distinction between acquiring language and learning it—one's innate capacities may contribute to the unconscious acquisition of a language, but there is no evidence that these determine the student's conscious learning of the language. Consequently, as Fledge states, "the CPH (…) may in the long run impede progress

in the field of L2 speech learning because it makes certain hypotheses which can be tested unwarranted" (1987, p. 174).

Therefore, albeit significant as regards brain development, the CPH inherently implies the neglect of perceiving pronunciation as a skill to be nurtured, for such a hypothesis obliterates any other factor affecting L2 pronunciation proficiency other than this critical period. An experiment differing from the brain lateralization as the end of one's end to their pronunciation competence is the one carried out by Bongaerts, Mennen and van der Slik. They studied a group of Dutch learners of French or English who were asked to pronounce some complex sentences in their L2. The results showed that some subjects of the experiment did sound like native speakers and therefore that "it is not impossible for post-critical period learners to achieve a nativelike accent in a non-primary language, in spite of the alleged biological barriers" and also with no linguistic immersion required (2000, p. 305).

2.5. **What makes students improve their pronunciation?**

L2 learners seem to have their pronunciation development affected by different factors, among which one can find gender, confidence (Hişmanoğlu, 2006, p. 5), and identity (Pennington & Richards, 1986, p. 215). When it comes to gender, a study by Piske, Mackay, and Flege suggests that women tend to have a better pronunciation than men (2001, p. 213). When it comes to confidence, some factors such as frustration and depression may lead the student to underperform and therefore lower their possibilities to progress in their pronunciation (Eckstein, 2007, p. 30). Moreover, a relaxed environment could improve the pupils' performance (Hişmanoğlu, 2006, p. 5), which could explain why some students underperformed in the second activity analyzed in this study, for it was a graded task. Another aspect worth highlighting is identity since some students may aim to reach a native-like accent if they feel bonded to a certain aspect related to the target language (Pennington & Richards, 1986, p. 215).

On the other hand, some learners may be interested in keeping a distinctive accent from their place of origin because it is part of their identity as well (Pennington & Richards, 1986, p. 215). Some investigators have stated that this can also occur when some students do not mind about their accent as far as they can get their message across (Cortés, 2000, p. 108), leading to the pupil uttering either

intelligible sounds and/or "proximal articulations" (Peterson, 2000, p. 12)—that is, sounds close to the ones of the target language that the alumnus makes by drawing back to their mother tongue. Because of this, some people believe in the intelligibility principle, which stresses the importance of suprasegmentals over reaching a native-like accent, for it "implies that different [suprasegmental] features have different effects on understanding," (Levis, 2005, p. 370-1). It is also common to have students who start improving their pronunciation when they reach proficiency in that language, which has been labeled as "developmental processes" (Morley, 1996, p. 141). Nevertheless, it is usually agreed that it is much easier for the student to learn to pronounce properly all along rather than in the last stages of their learning of the target language because there is a risk of those mispronunciations to be fossilized by then (Flege, MacKay, & Piske, 2001, p. 199). However, this is only a belief that falls into the spectrum of the "therapeutic approach, which asserts that the reason for mispronunciation is the articulation habits imposed onto the student by their own mother tongue" (Lozano, 2005, p. 4).

2.6. **How should students learn pronunciation?**

There are some observations proposed for the students to improve their pronunciation. One of them is a "phonic immersion" (Bartolí, 2005, p. 11) in class, which implies rejecting any sort of written material so as to avoid mispronunciations due to the lack of correspondence between graphemes or letters and their actual pronunciation (Giralt, 2014, p. 184). This technique does not correspond to the one used for this study since before the second podcast the pupils carried out an activity in which they had to label some words written in paper strips they had been displayed (see Appendix D). Hence, it would be interesting to compare the results of this study to the ones of a similar activity in which the alumni were not given the written words but just orally in order to compare the outcomes.

The pronunciation activity for this study, however, did include interaction. Not only were the students asked to debate on the actual pronunciation of the words they were given, but they were asked to correct their peers' performance after the mock interview for the study was finished. Despite being expected to develop their answers, however, when it comes to pronunciation they only pointed out that they had to improve it, but nobody pointed at specific words when requested by the

teacher, an expected strategy called "phonetic correction" (Lozano, 2005, p. 4). According to Cortés Moreno, for instance, interaction language learning is necessary for someone to improve their pronunciation since the students become aware of the mistakes they and their peers make (2000, p. 94). This could then have an impact on the pupils' autonomy for learning pronunciation because it allows the student to be aware of the level he or she has. Nevertheless, the outcome of this activity was rather poor at least as regards pronunciation.

The activity of the paper strips, however, turned out to be more demanding to the students. Since they were asked to classify the words in one of the three possible phonemes, they were required to carry out an activity implying a "reflective pronunciation" (Hişmanoğlu, 2006, p. 7) in groups—that is, the pupils had to reflect and debate on the pronunciation of the words to classify their pronunciation correctly. This activity was followed up by the teacher's phonetic correction, which is supposed to "'correct' the students following a phonic norm, a correct pronunciation model" (Lozano, 2005, p. 4). This was meant to allow the alumni to learn phonology in hopes for them to become autonomous learners in a future (Cortés Moreno, 2000, p. 94), being able to mind the actual pronunciation of words by checking out the phonetic transcriptions of the dictionaries or to give accurate feedback on pronunciation to their classmates and to themselves. However, the time span framing this study is way too short to expect any signs of autonomy from the students, yet it would be interesting to do further research on whether the students' autonomy would end up developing in the long run.

Some other perspectives like the behaviorist approaches to teaching pronunciation have also been examined, such as Jones' (1997, p. 105). The results, nevertheless, cannot be fully conclusive due to the lack of research on the pronunciation field and therefore it is hard to tell whether repeating the correct pronunciation of the words in the strips was significant to the students or not. Actually, there is no fully reliable literature on how to teach pronunciation (Derwing & Munro, 2005, p. 387), which complicates the process of interpretation of the data.

3. Methodology

This study has been carried out following the action research procedure. According to Greenwood and Levin, action research is "a set of collaborative ways of conducting social research that simultaneously satisfies rigorous scientific

requirements and promotes democratic social change" (2007, p. 1). To carry out this cycle, one must first "define the problems to be examined, cogenerate relevant knowledge about them, learn and execute social research techniques, take actions, and interpret the results of actions based on what they have learned" (p. 3). Hence, this process could be divided into six different steps, these being: selecting the focus of the study; identifying the driving question(s) for the research; combing through literature related to the topic; collecting, studying and interpreting the data; and eventually taking action based on the interpretation of the results of the analysis. However, it must be noted that the last step is unattainable prior to this study, for the author of this dissertation is no longer working as a teacher.

The comparison established has been approached through a quantitative analysis—that is, "[that one] which use[s] coding schemes to reduce the data of transcribed talk to counts of a specified set of features" (Mercer, 2010, p. 3). However, it must also be noted that a qualitative gaze has been utilized in that the data resulting from this quantitative study have been interpreted. Therefore, the data gathered have been classified in tables with two different sections: the "Incorrect" and the "Correct" columns, allocated for the improper and the proper pronunciations, respectively. The "Incorrect" column includes two sections: one with the target vowels entirely mispronounced and another one with those words the target vowel of which shares native-like traces but does not meet all the criteria to be the colored phoneme—that is, those sounds that could hint an ongoing assimilation of the sound. These have been allocated in the tables in orange cells. Under every word there is a phonetic transcription of how it has been pronounced and the time in which it has been stated. This table also lets the analysis adopt a systematic perspective, for it is based on three different categories that would therefore draw statistics on the amount of times the words are pronounced properly.

In order to keep the pupils' identity anonymous, they have had their names replaced by numbers. At the beginning of the course the students were asked to sign a letter stating that the alumni may be video-recorded, but that it will never be used for the public domain. Consequently, this study has been carried out without affecting the students' privacy.

3.1. **Research Method**

The goal of this paper is to explore whether students can learn pronunciation right after receiving phonetic input. The activities carried out to study this process were the following: first, the alumni performed a mock job interview in groups of three or four. Each member had a different role: the employer, the applicant to the job, and the examiner of the interview, who would record the activity and fill in a checklist assessing the performance of the candidate. Every five minutes the students would switch roles. On the following day, the students were asked to make the same groups so as to assess their peer's performance more freely—an activity that did not turn out to be successful.

Since their feedback was vague, the teacher asked the students to perform a backup activity to cover a common mistake regarding the students' pronunciation, the pronunciation of [ɚ] and [ɝ]. To do this, the teacher wrote on the board words grouped in two columns and asked the pupils whether those words had something in common as regards their pronunciation, one column for each phoneme. Not getting the appropriate answer, the teacher explained in which written contexts it is more common to come across the sounds [ɚ] and [ɝ]. Afterwards, the teacher divided the class into two and displayed some paper strips with one word for each piece of paper in both groups. They were given some time to discuss the actual pronunciation of the words in the strips, which they would have to allocate in one of their respective slots afterwards, these being "[ɚ]", "[ɝ]," and "None of them." Having finished the activity, the alumni were asked to record themselves for the final product, mostly carried out in groups of four. The main goal of this study was to examine whether the peer assessment carried out after the mock interview would imply any changes in the students' future performance, yet the vacuity of the feedback forced this study to focus on a different aspect instead.

After the students had uploaded the podcasts to Drive or sent it through email, the recordings were selected for this study (see Appendix G). Some podcasts were discarded because they did not comply with at least one of the following criteria: the pupils should have done both activities, the quality sound had to be intelligible, and the students had to speak off the cuff instead of reading out their notes. The alumni targeting a British accent were not counted for the pronunciation of [ɚ], for its British counterpart is a schwa, a vowel already existing in Catalan. Conversely, [ɝ] has been studied regardless of the accent since it was an unknown sound to most

students even without its rhoticity. The results of the pupils' output have been measured with percentages for the study to be more accurate. For example, the percentage of words mispronounced in Activity 1 is compared to the amount in Activity 2 to analyze whether the students have improved in the second performance. Nevertheless, it must be considered that this study has its own limitations. Firstly, the total amount of students studied shrinks to 24. Secondly, only two activities have been carried out, which does not allow this study to draw a completely reliable line of the progress made by the pupils, especially within such a short time span. The other side of the coin is, however, that the quality of this study is ensured especially by its reliability in that the pupils selected bear a high number of tokens used compared to the rest of the data.

Despite its representativeness or "generalisability" (Allwright & Bailey, 1991, p. 48) being jeopardized by its small number of students, the analysis relies on a statistical approach. Furthermore, the validity of this experiment is twofold, for it is both "internal" and "criterion-based," pivotal criteria according to Allwright and Bailey (1991, p. 47). The study is therefore internally valid in that the results are unambiguous since the data of the statistics associate to the type of activity and how it has been carried out. More so, the analysis is based on a series of criteria like the tables per se, which suggests a change from Activity 1 to Activity 2. Moreover, the evidence is always backed up with phonetic transcriptions (see Appendix E) and sometimes with Jeffersonian (see Appendix F), too, so as to discuss and measure the correctness of the pronunciation of the vowel depending on the sentence stress. Comparisons of phonetic waveforms with Praat (a software for speech analysis) are also present to examine unusual voice projections of some of the pupils.

4. RESULTS

4.1. Stress

The data that have been analyzed have resulted in 24 tables (see Appendix A), which evidence the actual classification of the words pronounced with the phonemes [ɚ] and [ɝ] depending on whether they have been pronounced properly or mispronounced. Since both phonemes are colored vowels and consequently merge two sounds in one, the slots for mispronunciations have been split into two groups depending on whether the student is integrating at least one of these two sounds so as to check if the integration of these phonemes is on the way. To classify all the words

properly, however, the candidate has had to weed out all the words which pronunciation depends on suprasegmental elements like stress to finally have an accurate distribution of the amount of words in which these phonemes have been uttered during the two podcasts.

The words from the recordings found to adopt the [ɚ] sound when unstressed are YOUR, WERE and HER (see Appendix B). The words that are usually stressed are those that are either content words or "loud-function" words— that is, the "kind of words that typically form rhythmic peaks" (Dickerson, 2011, p. 73). Conversely, YOUR, HER and WERE are usually unstressed due to their weight, for YOUR and HER are determiners and WERE is usually an auxiliary to mark tense or a copula, which bears no weight. Since "stress in Castilian Spanish does not involve an opposition between strong syllables with full vowels and weak syllables with reduced vowels" (Cooper, 2002, p. 209), speakers with a strong Spanish accent are expected to mispronounce these words. No explicit literature tackling the stress patters of these three words has been found, which has forced this study to assume these words are no exception to the general English stress patterns.

To start with, YOUR is a word that, when stressed, is pronounced as either /ˈjʊr/ or /ˈjɔr/. Nevertheless, not being a content word or a "loud function" word implies that most times it is going to be pronounced as /jɚ/ instead, which is its unstressed form. This replicates in the examples taken from the podcasts, for YOUR has 18 tokens, 16 of which should be in unstressed position. The cases in which YOUR has been pronounced as /ˈjʊr/ or /ˈjɔr/ have therefore been ruled out from the experiment. On the other hand, they have been counted as "Incorrect" if they were supposed to be in unstressed position regardless of the student's accent. Student 18 exemplifies this fashion:

S18 1 What is your name↘

2 If you have a cover letter ↗ (.) the interviewer knows more things about you↘ (.) like personality (.) or (.) eh:: ↘ (.) your: before works↘

This pronunciation of YOUR is /jʊr/ in both cases and yet only in the second sentence YOUR should be stressed. In the first example YOUR simply works as a determiner and, despite the words WHAT and NAME being emphasized, YOUR is not unstressed. Consequently, in this case the pronunciation of the word YOU has been marked as wrong in the table of the [ɚ], for it should have been pronounced as

/jɚ/. On the other hand, in the second example YOUR is lengthened and it is uttered after a pause. Hence, this study has considered that the use of /ˈjʊr/ in this case was appropriate—it would be placed after a pause and therefore act as a "loud function" word, for it signals the beginning of a phrase. Thus, this case has been considered to bear no mispronunciations and this token has been excluded from the study since it does not include neither [ɚ] nor [ɝ].

As regards HER, one must know that it is pronounced as /ˈhɝ/ in stressed position and as /hɚ/ or /ɚ/ in unstressed position. Three niceties have been found in the transcripts, two of which are in unstressed position. Since it works as a determiner in these cases, it is expected to be unstressed, for it is not a content word or a "loud function" word to create rhythm. An instance of this could be Student 12 in:

S12 1 I prefer to be with a person that likes ↘ (.) uh: (.) his or her work ↗ to have something in common↘

However, the way in which Student 6 pronounces HER could be considered to be an exception in this case:

S6 I would say↘ (.) to: (.) her ↑ or to↘ him↑ tha:t↘ is a very nice purse ↗

In this case, HER is uttered after a pause. Since the student was lengthening TO before the pause, one can infer that she was struggling to continue the sentence. The outcome of this is that she stresses the objects following TO; that is, HER and HIM. Therefore, one can argue that, albeit uncommon, this case could exemplify a case in which HER could appear in a stressed position. Consequently, the paradigm of the pronunciation of HER encompasses the pronunciation of both [ɚ] and [ɝ], which implies that no HER token has been excluded for the analysis although these phonemes have been classified according to the expected stress depending on the context in which they fit.

Finally, WERE has been spotted 13 times in the recordings. Out of these, only in three of these cases has it been used as a lexical verb. Since WERE is a copulative verb, it adds no content to the sentence and it sets no type of rhythmic peak, which implies that it makes sense for WERE to be unstressed when a copula. In Student 11's statement, for example, WERE should have its vowel [ɝ] dropped to [ɚ].

S11 1 I: ↘ (.) think tha:t (.) I don't know they: like they: ↘ (.) they like↘ (.) they were ↗ like bad with me↗ because I: worked a lot and they paid me e:m low money↘

Conversely, when it comes to the other 10 tokens, WERE was used for inverted conditionals, which implies that WERE is fronted to the beginning of the sentence. Since no literature regarding stress on inverted conditionals has been found, it has been assumed that, WERE in this case acts as a "loud function word," for it signals a rhythmic peak to emphasize conditioning. More so, it could be argued that WERE as a conditioning marker sets an "upstream destressing" throughout the rest of the clause; that is, that the stress on the rest of the words of the clause with the conditional do not have the same level of stress—they are destressed (Dickerson, 2011, p. 73). Student 3 is one of the few pupils who seem to follow this pattern correctly:

S3 Were:↗ you given the chance to work with us↘ (.) how↗ would you give (.) a::n optimal service to the client↘

In this sentence one can see that the rhythm of the first clause decreases after WERE, going along with stress except for the word CHANCE, which the student also emphasizes. However, one can see that the rhythm decreases throughout the clause, following this "upstream destressing."

4.2. **Data**

The results in the table below show the amount of times the [ɚ] has been pronounced properly or mispronounced. The mispronunciations, however, have been split into two sections: "Assimilating" and "Incorrect." The former refers to the cases in which one of the two sounds creating the [ɚ] is made, which could hint a gradual assimilation of the sound. An example of this would be when a student says "worker" as /ˈwɔrker/ instead of /ˈwɜkɚ/—the [r] sound is assimilated in both stressed and unstressed positions, but [ə] and [ɜ:] are not, impeding these to fall together. The latter, on the other hand, includes only those examples in which only one or none of the sounds necessary for the target phonemes are displayed. Taking into account that the use of these sounds is not recurrent in each pupil, only those students who have four or more tokens per activity have been selected for the analysis in order for the data to be reliable enough, these being students 12, 18, 19, 21, and 23.

[ɚ]		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
P1	Correct			1			1			4		1	3			2				1		4	2	4	1
	Incorrect						1		1			1		1	2		3	2	4	2		1			1
	Assimilating									1	1	1	1			1			1	1	1				
P2	Correct	3		2			1	1	1	2	4		4			2	1		2	1	4	6	2	4	
	Incorrect		3		3	1	1	1	1			1		3		3	2	3	4	1					
	Assimilating		1	1		1		1		1	1		3		3	1		1		2	1	1	1		1

To start with, the table suggests that Student 12 has performed better in the first activity as regards the use of [ɚ]:

Table 12

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 12		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Matter	Her	Purse	Working	Interview	Your	T-Shirt	
	Student's pronunciation	/ˈmatɚ/	/her/	/pɝs/	/ˈwɝkɪŋ/	/ˈɪntɚˌvju/	/jʊr/	/ˈtiː.ʃɝːt/	
	Time	1st	1st	1st	1st	3:54	4:29	11:3	

	podcast: 2:00	podcast: 2:23	podcast: 4:00	podcast: 1:45			7	
Word	Personality		Perfect	Work	Interviewer	Interviewer		
Student's pronunciation	/pɚsəˈnaləti/		/ˈpɝfekt/	/ˈwɚrk/	/ˈɪntɚˌvjuɚ/	/ˈɪn.t*r.vjuːɚ/		
Time	1st podcast: 2:02		1st podcast: 1:12	1st podcast: 1:28	4:06	4.34		
Word	Employer		First	Nurse	Communicator	Were		
Student's pronunciation	/emˈplɔɪɚ/		/fɝst/	/n*rs/	/kəˈmjuːnəˌkeɪɾɚ/	/wer/		
Time	2nd podcast: 0:03		1st podcast: 0:22	1st podcast: 2:39	4:46	7:36		
Word			Prefer	Were	Understood			
Student's pronunciation			/prɪˈfɝ/	/wer/	/ˌʌn.dɚˈstud/			
Time			1st podcast: 2:06	2nd podcast: 2:24	4:52			

In the first podcast, she used [ɚ] correctly the 75% of the times, whereas the 25% left of times the sound was mispronounced. A different paradigm can be found in the second podcast, in which [ɚ] is pronounced properly only a 57.14% of the times. However, from the 42.86% left, in no cases was the target sound uttered fully incorrectly, for all the mispronounced sounds included one of the phonemes necessary to project [ɚ]. Additionally, the data suggest that the word INTERVIEWER is uttered twice in the second podcast and is pronounced differently in both niceties. This bring up three possibilities: either the students' utterance of the word is random, it depends on other factors, or it is still under a process or assimilation.

Moreover, it must be pointed out that, out of the seven times [ɚ] is pronounced properly in both activities, the sound corresponds to the <er> grapheme in all cases except for one, COMMUNICATOR, in which it is <or>. Conversely, in the first podcast the word that is mispronounced, HER, is also written with <er>, whereas the only word mispronounced in the second activity with <er> is INTERVIEW. The other cases of mispronunciation are YOUR and WERE, the spelling of which differs from each other.

Student 18, on the other hand, seems to outperform in the second podcast:

Table 18

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 18		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Your		Work	Cover	Better		Works
	Student's pronunciation		/dʒuɾ/		/woɾk/	/ˈkovɚ/	/ˈbeteɾ/		/woɾks/
	Time		0:07		1:43	0.18	0:32		0:29
	Word		Personality		First	Letter	Personality		Person

Student's pronunciation		/pɚsoˈnaliti/		/fɚst/	/ˈletɚ/	/pɚsoˈnaliti/		/ˈpɚson/
Time		1:40		4:26	0:19	0:42		6:54
Word		Teacher		Person		Interviewer		
Student's pronunciation		/ˈtitʃɚ/		/ˈpɚson/		/intɚˈviuɚ/		
Time		2:21		1:38		6:39		
Word		Another		Prefer		Clever		
Student's pronunciation		/aˈnoðɚ/		/priˈfɚ/		/ˈklevɚ/		
Time		5:26		4:17		6:52		
Word		Interview						
Student's pronunciation		/ˈintəɾvju/						
Time		5:15						

In the first activity, the pupil mispronounced all the words with [ɚ], integrating only one of the sounds necessary for its correct pronunciation in the 20% of the cases, which was when uttering INTERVIEW. Conversely, in the second podcast the alumnus used [ɚ] correctly 33.33% of the examples, the rest of times being uttered entirely incorrectly. Other than YOUR in the first activity, the words with [ɚ] used in both podcasts have the <er> spelling. Therefore, it could be argued that there is no correspondence between spelling and pronunciation hinted by this pupil, unlike with Student 12. Nevertheless, it must be noted that only the words COVER and LETTER, which are actually used as a collocation, are actually pronounced right, contrasting with words with similar spellings like BETTER.

Conversely, Student 19's results seem not to vary much in the second podcast:

Table 19

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 19		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Worker	Rather		Worker	Worker	Cover		Worker
	Student's pronunciation	/ˈwɔɾkɚ/	/ˈraðeɾ/		/ˈwoɾkɚ/	/ˈwoɾkɚ/	/ˈkɔvəɾ/		/ˈwoɾkɚ/
	Time	1st podcast: 0:14	1st podcast: 1:51		1st podcast: 0:14	5:28	0:20		5:27
	Word		Personality		Person		Interview		Work
	Student's pronunciation		/pɛrsoʼnaliti/		/ˈpɛrson/		/intɛʼviu/		/ˈwɔrk/
	Time		2nd podcast: 1:09		1st podcast: 0:16		0:12		5:00
	Word		Former		Work		Letter		Working
	Student's pronunciation		/ˈfɔrmer/		/wɔrk/		/ˈletəɾ/		/ˈworkɪŋ/

Time		2nd podcast: 1:37		1st podcast : 0:20		0:21		6:21
Word				Purses				
Student's pronunciation				/puɾ'seis/				
Time				2nd podcast : 2:02				
Word				Purse				
Student's pronunciation				/puɾs/				
Time				2nd podcast : 2:13				
Word				Purchasing				
Student's pronunciation				/puɾ'tʃeisɪŋ/				
Time				2nd podcast : 2:08				

In the first activity, the pupil pronounces [ɚ] correctly 25% of the times, whereas the 75% left encompasses a 25% of possible assimilation and a 50% of completely incorrect pronunciation. A similar distribution takes place in the second activity, in which the 25% of the words are pronounced properly. Conversely, the 75% left is

mispronounced, yet here a 50% of the total amount of tokens shares a trait with the target sound, possibly hinting a gradual assimilation of the target sound. Despite using the Spanish [ɾ] instead of [r], the student uses the [ə]. This differs from the word FORMER in the first activity, the only instance pronounced with the [r]. Hence, despite being an exceptional case, the data suggest that the pupil can utter the [r] sound although it is not assimilated yet. Due to the fact that there are only two activities to compare, it cannot be said that the second performance hints an improvement as regards the assimilation of the target sound. Nevertheless, it must be noted that only in the second activity does the [ə] appear and in the long run [ə] and [r] could appear together as the student gradually assimilated the sounds.

Another student hinting improvements between the two podcasts is Student 21:

Table 21

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 21		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Eager	Humor	Learn	Person	Cover	Your	First	
	Student's pronunciation	/ˈigɚ /	/ˈhjumoɾ/	/lɝn/	/pɐrson/	/ˈkovɚ/	/jɔr/	/fɝst/	
	Time	0:12	1:37	0:13	1:35	2:57	4:55 vs 5:16 vs 5:20	3:41 4:29 4:39	
	Word	Other		Person	Work	Letter		Third	
	Student'	/ˈɔðɚ/		/ˈpɝs	/wɔɾk	/ˈletɚ/		/θɝd	

s pronunciation			on/	/			/	
Time	1:13		1:13	3:03	2:57		5:14	
Word	Sincerely		Service	Person	Interview			
Student's pronunciation	/ˈsinsəɻli/		/ˈsɜɻvis/	/p*rson/	/ˈintəɻvju/			
Time	2:25		2:15	1:34	3:02			
Word	Atmosphere			Work	Employers			
Student's pronunciation	/ˈatmos.fiəɻ/			/wɔrk/	/em'plɔɪəɻ /			
Time	1:50			1:42	3:17			
Word					Structure			
Student's pronunciation					/ˈstraktəɻ/			
Time					3:46			
Word					Properly			
Student's pronunciation					/ˈpropəɻli/			
Time					4:16			

Despite already having pronounced [ɚ] properly in 80% of the cases in the first activity, the sound [ɚ] was mispronounced once in HUMOR. This contrasts with the second activity, in which she amounts to an 85.71% of tokens pronounced properly while using at least one sound needed to utter the vowel in the remaining 14.29%. However, it may be worth signaling that the spelling of all the words pronounced properly is <er>, which differs from the incorrect pronunciations. In the first activity, for instance, the target sound in HUMOR is fully mispronounced and yet in the second one YOUR certainly is, too. More so, not pronouncing [ɚ] in this case could also be determined by stress issues, for YOUR would be pronounced properly if it was actually stressed, yet it is supposed to be dropped in the contexts in which it is uttered. This notwithstanding, the use of [r] in YOUR adds the rhoticity characteristic of [ɚ], which could hint that there is an ongoing process of assimilation or at least an effort to utter the word—differing from the pronunciation of HUMOR, which is uttered with the Spanish sound [r]. Moreover, some pupils like Student 18 suggest that pronunciation and spelling do not necessarily go together. Therefore, stating that Student 21's pronunciation correlates to the spelling of the word would be an assumption that does not necessarily need to be true, especially since the evidence of incorrect pronunciations is scarce.

Finally, Student 23 does not outperform or underperform from the first to the second podcast:

Table 23

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 23		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Worker		Purse	Worker	Interview		Firstly	Wear (as WERE)
	Student's pronunc	/ˈwɔrkɚ/		/pɝs/	/ˈwɔrkɚ/	/ˈin.tɚ.vju/		/ˈfɝstli/	/ˈweɚ/

iation								
Time	1st podcast: 0:57		1st podcast: 4:30	1st podcast: 0:57	2:32		2:34	2:40
Word	Understand		Person	Work	Proper		Perfect	Shirts
Student's pronunciation	/ˌʌn.dəˈstand/		/ˈpɝ.sən/	/wərk/	/ˈprɒpɚ/		/ˈpɝfekt//	/ʃirts/
Time	1st podcast: 2:26		2nd podcast: 1:09	1st podcast: 0:58	2:41		2:43	3:03
Word	Disaster		Service	Purses	Employer			Dirty
Student's pronunciation	/di'sastɚ/		/ˈsɝ.vis/	/ˈpursəs/	/em'plɔɪɚ/			/ˈdiɚti/
Time	1st podcast: 2:57		2nd podcast: 1:35	2nd podcast: 2:38	3:19			4:05
Word	Personality			Purchasing	Shower			
Student's pronunciation	/pɚsən'aliti/			/pʊr'tʃeɪziŋ/	/ˈʃaʊ.ɚ/			
Time	2nd podcast:			2nd podcas	3:57			

	1:10			t: 2:43				
Word				Purse				
Student's pronunciation				/purs/				
Time				2nd podcast: 2:48				
Word				Were				
Student's pronunciation				/wer/				
Time				2nd podcast: 1:29				

His pronunciation of [ɚ] seems to be fully assimilated in his language use, for all the tokens are pronounced properly. Nevertheless, it must be pointed out that all the words with [ɚ] have the <er> spelling, which overshadows any possibilities of contemplating whether the pronunciation of this phoneme would be correct in other spellings.

Another aspect to consider in the overall perspective of the pronunciation of [ɚ] is that the students with a British accent switched into American after receiving the input. Despite the phonetics feedback explaining both accents, the feedback was given in American and a major focus was given to the explanation in American, for the slots in which the pupils were to classify the paper strips were in American. Moreover, the teacher's accent is American. These factors could not only explain why the students changed their accent, but also suggest that there is a pronunciation change in the second performance due to the phonetics input and the activity.

The results of the pronunciation of [ɝ] are indicated in the table below, which follows the same criteria as the [ɚ] table. All the podcasts that amount to four or more tokens have been studied so as to analyze the students' progress. Therefore, students 1, 15, 16, 23 and 24 are the ones that have been analyzed.

[ɝ]		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
P1	Correct	2		2	1	1	2			2	1		4		1		1	1			3	3	2	3	
	Incorrect		5		1	2	3	2	3	3		3		2	3	6	3	6	3	5	3	2	2		3
	Assimilating	2		2	1					2			3	1					1	1	1	2	1	6	1
P2	Correct	3		1		1				1	2		1		1	2						2		2	
	Incorrect			1	2	2	1	1				2		2		2	4	1	2	1					4
	Assimilating	1				1			1							1				2	3			2	

When it comes to Student 1, it could be argued that the data hint an improvement in Activity 2:

Table 1

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 1		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word			Work	Purse	Gather		Shirts	Verbal
	Student's pronunci			/wɝk/	/prɔs/	/ˈgæðɚ/		/ʃɝts/	/ˈv*rbal/

ation								
Time			1:50	5:39	4:00		6:27	4:20
Word			Person	Weren't	Interviewer		Turn	
Pronunciation mistake			/ˈpɝsən/	/ˈwerent/	/ˈɪnʈɚˌvjuɚ/		/tɝn/	
Time			5:49	4:45	4:01		6:55	
Word					Colors		Were	
Pronunciation mistake					/ˈkʌlɚz/		/wɝ/	
Time					5:59		5:15	

In her first performance, Student 1 pronounced the 50% of the words correctly, whereas the 50% left did not fully reach the target sound. Conversely, a 75% of words were pronounced properly in the second podcast, with only one nicety of mispronunciation, the word VERBAL. Since the phoneme uttered by the student neither corresponds to the target sound nor sounds like Spanish or Catalan, what should be pronounced as [ɝ] has not been transcribed and an asterisk has been placed instead, for the sound displayed ranges between [e] and [ɜ:].

Looking at the data, one can see that Student 1 was already undergoing a process of assimilation of [ɝ], for it is mostly pronounced correctly. Moreover, the words in which the sound is pronounced are different in spelling, which gives more consistency to the data in that it cannot be assumed that her pronunciation is correct only when the word has a certain grapheme. In the first activity, PURSE is mispronounced because she splits [ɝ] into two separate sounds and switches their order, uttering /prɜs/ instead. The other word mispronounced is WEREN'T, which is uttered as /ˈwerent/. However, in the second activity Student 1 pronounces WERE as /wɝ/, improving therefore her mispronunciation in Activity 1. This example could hint that Student 1 has improved her pronunciation at least of this word.

As regards Student 15, one can see that her pronunciation in the second podcast overrides her first performance:

Table 15

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 15		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Exercise	Rather		Person	Answer	Afternoon	Nervous	Prefer
	Student's pronunciation	/ˈesɚsaɪ/	/ˈreiðer/		/ˈpɐrsoˈn/	/ˈansɚ/	/ˈafteɾnun/	/ˈnɝ.vjus/	/pɾeˈfeɾ/
	Time	1st podcast: 0:34	1st podcast: 0:40		1st podcast: 0:38	6:16	5:52	7:14	6:20
	Word	Personality			Work	Personality	Employer	First	Were
	Student's pronunciation	/pɚsəˈnaliti/			/woɾk/	/pɚsəˈnaliti/	/emˈplojeɾ/	/fɝst/	/w*ɾ/
	Time	0:39			1st podcast: 1:27	6:07	6:01	5:35	7:20
	Word				Purses		Were		Work
	Student's pronunciation				/puɾs/		/weɾ/		/woɾk/
	Time				1st		6:11		6:19

				podcast: 1:01				
Word				Purchasing		Interview		
Student's pronunciation				/purʧeisin/		/ˈintəɾ.vju/		
Time				1st podcast: 1:07		5:32		
Word				Purse				
Student's pronunciation				/puɾs/				
Time				1st podcast: 1:11				
Word				Purse				
Student's pronunciation				/puɾs/				
Time				1st podcast: 1:11				

In the first activity, the pupil uttered the [ɝ] sound incorrectly every time, reaching the amount of five mispronunciations. Conversely, in the second podcast one can see a change, for she pronounces the [ɝ] sound correctly 40% of the times. Moreover, one can notice a difference not only in the amount of words with [ɝ] that have been pronounced properly but in the sounds that assimilate some traits of [ɝ] like rhoticity,

which is the case of WERE. This possible assimilation of the target sound comprises the amount of 20%, which could emphasize the effort to utter the phoneme properly, something unseen in the first recording. More so, some words like WORK are pronounced wrongly in both podcasts and yet the student's pronunciation changes in the second podcast to adopt the [r] sound. This adds the rhotic color to the target vowel, different from the first waveform in that the sounds are more even and connected in the second one (see Appendix C: Image 1). Thus, one could argue that the data suggest an effort to assimilate the pronunciation of [ɝ] in Student 15 from the first to the second podcast.

On the other hand, Student 16 seems to underperform in the second activity:

Table 16

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 16		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Worker	Learner	Person	Interview	Colors		Work
	Student's pronunciation		/woɾkeɾ/	/ˈlɝ.nəɾ/	/ˈpeɾson/	'intər.vju/	/ˈkoloɾz/		/woɾk/
	Time		2:09	2:41	0.52	3:04	3.45		3:15
	Word		Personalities		Work		Interviewer		Skirt
	Student's pronunciation		/peɾso'nalitis/		/woɾk/		/ˈinteɾ.vju/		/skeɾt/
	Time		3:27		1:03		4:19		3:37
	Word		Learner		Worker				Person
	Student'		/ˈlɝː.nəɾ/		/ˈwoɾ				/ˈpeɾso

s pronunciation				kɐr/				n/
Time		2:41		2:09				4:06
Word								Personal
Student's pronunciation								/ˈpɐrsonal/
Time								4:10

In the first performance, the pupil pronounced one word correctly out of four, this being LEARNER and consequently reached the 25% of correct tokens. The rest, conversely, were incorrect and did not even assimilate any traits of the target sound. However, in the second activity she did pronounce all the four words incorrectly, making her underperform the pronunciation of [ɝ]. Moreover, the spellings are varied, therefore it cannot be assumed that the mispronunciations are isolated cases related to the grapheme of certain words but rather the opposite—Student 16 seems to have no integration of the [ɝ] sound except for the case of LEARN in the first activity.

Another improvement between both activities can be hinted in Student 23. Having three tokens out of nine pronounced correctly, the [ɝ] sound has been uttered correctly 33.33% of the times in the first podcast, the rest of the tokens including elements of the target vowel despite being incorrect. Hence, one could assume that the student was already assimilating the sound during the first activity. Conversely, in the second podcast one can observe that [ɝ] is pronounced correctly 50% of the times, the rest of cases being pronounced incorrectly and with no elements that could indicate sound assimilation. However, all the sounds pronounced incorrectly in the second activity included were spelled with <ir>, a grapheme that does not appear in the first activity. Even so, a word with <ir> is also pronounced correctly in the second video, this one being FIRSTLY. Therefore, the data could actually suggest that there is a correlation between spelling and pronunciation in the case of this

student, who only seems to struggle with words with <ir> for the pronunciation of [ɝ]. Moreover, represented in red, the data also suggest a case of hypercorrection when the pupil means to say WEAR, which he pronounces as WERE in a stressed position. This could also reinforce the idea that he is making an effort to utter the sound and yet that he may need more time to know the contexts in which [ɝ] actually fits.

Another case worth pointing out is Student 24's. Her pronunciation of [ɝ] is incorrect in all cases in both podcasts:

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 24		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Worker	Another		Learn		Answer		Working
	Student's pronunciation	/ˈworkɚ/	/aˈnoðeɾ/		/ˈleaRn/		/ˈansəɾ/		/ˈwoɾkin/
	Time	1st podcast: 0:41	2nd podcast: 0:18		1st podcast: 0:18		6:03		4:55
	Word				Worker				Worlds
	Student's pronunciation				/woɾkɚ/				/worlds/
	Time				1st podcast: 0:43				5:32
	Word				Work				Work
	Student's				/woɾk/				/woɾk/

pronunciation								
Time				2nd podcast: 0:34				6:10
Word				Worker				Learn
Student's pronunciation				/ˈwɔrkɚ/				/leaRn/
Time				1st podcast: 0:41				7:17

As the data point out, in none of them does it look like she is reaching the target sound. However, one fact must be pointed out—there are two cases in which she does not fully draw back to her mother tongue, Spanish. In the first activity, she pronounces the [r] sound instead of [ɾ], which would be the expected choice from a Spanish speaker who has used [ɾ] in the other niceties. However, be it due to randomness or a conscious effort to utter the sound, she managed to integrate this foreign sound in the word WORKER.

The other example is when pronouncing LEARN. In both podcasts it seems like she is adopting a French accent, for the <r> is pronounced as [R], hence her /ˈleaRn/ instead of a native-like /ˈlɝn/. This fact could indicate that, although unsuccessfully, she was exceptionally making an effort to utter a sound unknown to her, yet no progress is made. Nevertheless, it must be noted that the length of [ea] is similar to the [R] when she says /leaRn/ (see Appendix C: Image 2). There is a possibility that this indicates that she does understand that the sound [ɝ] consists of two sounds falling together, for [e] and [a] last as much as [R] despite none of them merging. Hence, maybe her capability of perceiving sounds is not completely flawed and it is her uttering abilities that are missing.

Taking an overall perspective of the students' pronunciation of [ɝ], one could argue that the half of the cases exposed suggest a significant improvement, the other two pupils either not improving or underperforming in the second podcast. Since the data are rather scarce, it must be pointed out that these results can be far from being representative of larger groups. If the data threshold of four tokens per activity was lowered to three, students such as number 4 and 20 would show abrupt changes in pronunciation performance, both of them implying that the students underperformed in the second activity. Nevertheless, this information would not be as accurate and therefore not as reliable as with the span used for the analysis. Moreover, there is a fact that should not be overlooked: albeit relatively low, the data do in fact suggest the presence of students who notoriously outperform in the second activity regarding the pronunciation of [ɚ] and [ɝ].

5. Discussion

This study has examined the changes in the pronunciation of the vowels [ɝ] and [ɚ] from one podcast to another. In these videos the pupils had to record themselves to perform a mock interview and to explain the necessary clues to have a successful job interview, respectively. However, the students were given phonetic input after the first activity, the output of which is the object of this study. When it comes to [ɝ], the data suggest that a 50% of the alumni performed better in the second activity, whereas a 25% remained on the same level. On the other hand, as regards [ɚ] a 40% of students appear to perform better in the second activity, a 20% keeping the same amount of tokens and the 40% left underperforming the pronunciation of this sound compared to the first podcast. Thus, it could be argued that according to the data the changes from one recording to another suggest a general improvement of the sounds even within such a short time span.

From a "therapeutic perspective" (Lozano, 2005, p. 4), it is assumed that the students will generally draw back to their mother tongue when speaking in English, this one being either Catalan or Spanish. However, the data seem to indicate that a "phonetic correction" (Lozano, 2005, p. 4) followed by an activity on "reflective pronunciation" (Hişmanoğlu, 2006, p. 7) is enough to already trigger some changes in the alumni's segmental features. What was utterly unexpected was indeed that a higher improvement would be seen in the pronunciation of [ɝ] over [ɚ]. Since this experiment was carried out in the outskirts of Barcelona, most students are supposed

to speak Catalan and therefore be familiar with the schwa, which differs from [ɚ] in that the latter has the [r] sound merged to the schwa. However, Catalan has neither [ɝ] nor [3:] and the data indicate that more students have assimilated [ɝ] instead. A possible explanation to this could be that, the schwa already being an assimilated sound close to the target language, the students may rely on "proximal articulations" (Peterson, 2000, p. 12) and consider it not to be a major mistake. This assumption would fall in line with (Bongaerts, van Summeren, Planken, and Schils, 1997, p. 305), who argues that some pupils ignore some mispronunciations due to the fact that these are not that relevant to them, considering to improve it when having a higher level in any case, a recurrent phenomenon labeled as "developmental process" (Morley, 1996, p. 141).

A hypothesis to why some students have learned to pronounce better than others could be related to the pupil's identity. As Pennington and Richards suggest, some speakers may use a pronunciation that is intelligible but not native-like so as to stick to their sense of belonging to their actual mother tongue and therefore display some elements of their L1 in the target language to make their origin implicit in their speech (1986, p. 215). This could be the case of Student 11, a male teenager whose capabilities of learning should still be optimal enough for him to have it easier than older pupils to learn or acquire a sound. However, he does not improve his pronunciation throughout the activities. One interpretation is that this could go fit his identity as a student who often skips classes and fails the tasks and projects of the course.

It could be argued that the positive results of the students do not need to stem from the phonetic activity and that most students were outperforming in the second podcast simply because it was an assessed activity. Nevertheless, it has been proven that the students generally underperform when being tested due to nervousness, a lack of confidence, frustration or even depression (Eckstein, 2007, p. 30, Hişmanoğlu, 2006, p. 5). Consequently, what would be expected in the second performance is rather the opposite—since the students were going to be assessed afterwards, their pronunciation should be expected to worsen in any case, not improve. However, the results suggest otherwise, indicating a general improvement among the alumni.

Despite the results, the teaching procedure used clashes with other perspectives. Some studies explain that a phonic immersion leads to more successful

results and therefore no written materials should be used (Bartolí, 2005, p. 11 and Giralt, 2014: 184). However, paper strips with words were utilized for the activity on phonetics, which made the students ponder on pronunciation based on written input. Hence, it would be interesting to carry out a similar activity with oral input only to compare the outcomes. In fact, some pupils have seemed to learn pronunciation through imitating instead of thanks to the activity per se. This could be the case of Student 18, whose accent, albeit remarkably Spanish, adopted the [ɚ] sound only in the collocation COVER LETTER, words steadily repeated throughout the unit. Therefore, it could be argued that Student 18 could learn better with Behaviorist methods like repeating after the stimuli, in this case the stimuli being the recurrent repetition of these words by the teachers. Studies like Jones' (1997) have noted that some pupils do learn through behaviorist approaches although not everyone improves in the same fashion. Thus, the same could be said about the approach of this study, which hints some progress only for some students.

The suggestions taken from the data seem not to fully fall in line with the Critical Period Hypothesis. Student 15, who is in her late thirties, hints the integration of the r-colored vowels in her speech, which is suggested by the data not only in that she has shown a gradual decline of the use of [ɾ] to use [r] instead, but also because she successfully utters the colored vowels in some cases in the second podcast. On the other hand, older pupils like Student 24 could be considered not to have improved regarding the pronunciation of the two target phonemes. This can be seen in this case, for Student 24 even tries to pronounce LEARN correctly and fails in her attempt. Actually, she draws back to the French phoneme [R], from which one can infer that she did learn French when younger, a common image in Spain 50 years ago.

Assuming that she is in her late fifties or early sixties, it could therefore be argued that her English remains in a state of fossilization from which she has not moved despite her efforts. Conversely, it could also be understood that her "discrimination aptidudes" (Haslam, 2010, p. 77) are now flawed due to age—that is, she may think that [R] is the correct phoneme to be used instead of [r] due to her lack of ability to tell the difference when she hears these sounds. This, however, should not neglect her opportunity to learn to pronounce, for she is an adult who has learned to learn (Lozano, 2005, p. 6, Torres Águila, 2005, p. 5). In fact, she professionally works as a teacher, so she should be able to develop personal strategies to assimilate

these new sounds in the long run (Haslam, 2010, p. 78). Nevertheless, her lack of integration of these sounds may also be triggered by the lack of time to learn to utter this phoneme. Conversely, Student 15, who is in her late thirties, does seem to improve her pronunciation after the activity, which brings up the possibility of different other factors affecting pronunciation learning.

Simultaneously, Student 23, who is 17, shows little learning of the target phonemes. This may have happened because he already knew how to utter these sounds in most cases, which would be reasonable according to the CPH. Hence, it could be argued that, owing to his age, he may still be able to rely on his innate skills, which are supposed to have ended by the age of 19 (Torres Águila, 2005, p. 4). This would imply that the activity on the phonemes was not effective for him since he had already acquired this sound. It must be noted, however, that stating that he acquired this sound instead of learning it is just an assumption based on his age. Furthermore, according to the data Student 23 does mispronounce two words, which are those with <ir>. Except for FIRSTLY, which he pronounces correctly, Student 23 mispronounces SHIRTS and DIRTY, which draws a possible correspondence between spelling and pronunciation and an incomplete assimilation of [ɜ˞]. More so, the teacher's explanation of the phoneme explicitly tackled the pronunciation of words with <ir> and <ur> graphemes. Hence, it could be argued that he seems not to have learned anything due to his reliance on his acquisition of the sounds.

5.1. **Limitations**

Despite the strict accuracy that this study has aimed to adopt in order for the data to be reliable, the remaining information to be studied is scarce, for only 10 pupils have been analyzed. This implies that the results, albeit reliable in that they are accurate, must not lead to generalizations of the pronunciation learning in other contexts or with different individuals. This study therefore only sheds light on the students studied and only with further research with larger groups or comparisons with other students could this paper become generalizable, but this study by itself should not normalize the statistics of the amount of students who immediately improve their pronunciation after receiving input.

Moreover, it must be mentioned that the research in the field of pronunciation pedagogy is rather scarce (Derwing & Munro, 2005, p. 387; Pennington & Richards, 1986, p. 221). What is more, the literature on pronunciation teaching tends to include

perspectives that clash with one another, which does not allow having a clear vision of the aspects to bear in mind when teaching pronunciation. This fact has hampered the interpretations taken in this study, for some of them could be biased or challenged by other hypotheses.

6. Conclusions

This study has answered the question "Can non-native speakers learn to pronounce the colored vowels [ɚ] and [ɝ] after one phonology activity?" by examining a group of students who performed two different activities. The first podcast consisted in acting out a mock job interview and the second one in making an informative video on how to have a successful job interview. Before the second activity the pupils were given input on the [ɚ] and [ɝ] sounds, followed up by an activity on phonology. This dissertation has especially compared both performances to fathom whether there were any improvements regarding the pronunciation of the phonemes [ɚ] and [ɝ] within such a short period of time of assimilation, suggesting that there has been a remarkable improvement in some of the students' pronunciation. In the case of [ɚ], out of the total five students 18 and 21 have improved their pronunciation, whereas students 19 and 23 have stayed relatively at the same level, and Student 12 has underperformed in the second activity. As regards [ɝ], three out of the five pupils analyzed seem to have improved in the second podcast, namely Student 1, 15, and 23. Conversely, Student 16 has underperformed and Student 24 has kept the same percentage of mispronunciations in both performances. Thus, there seems to be an improvement in the pronunciation of these phonemes of a 40% for [ɚ] and a 60% for [ɝ].

This analysis also brings up some hypotheses related to the alumni's mispronunciations. Some native Spanish and Catalan speakers seemed to draw a correlation between spelling and pronunciation, which can especially be seen with <ir>, which some students like number 23 tend to mispronounce. Conversely, the words with <er> spelling tend to be pronounced correctly, especially with the [ɚ] sound. Other aspects affecting the students' improvements have also been considered, such as age, the Critical Period Hypothesis, and identity, reflecting on the fact that after a certain age some students may not have their pronunciation competences hampered. The data from this study actually suggest that these considerations do not apply to all cases and some students may underperform despite

being young, whereas older speakers like Student 15 seem to have improved their pronunciation. The data for this study seem not to fall in line with the CPH, yet these are too scarce to make generalizations and therefore this analysis should not be understood to challenge this hypothesis. It would have been interesting to study whether gender influences the student's performance. However, only 2 out of the 9 students studied are male and therefore any guesses would have been barely unfounded.

This study suggests that some students can indeed learn to pronounce after receiving some input and performing a pronunciation activity, which brings up the question on whether some students can learn to utter other foreign sounds by following this procedure or if this is an isolated case and, in the long run, whether the students would end up sounding like native speakers of the target language. It would be interesting to see further research combing through the aspects that have caused the underperformance of some pupils and the outperformance of others. Furthermore, this study could be useful in the field of pedagogy, for it could be used to help to describe *how* students learn pronunciation, a literature missing nowadays (Pennington & Richards, 1986, p. 221). Moreover, the same analysis could be done with larger groups so as to improve the generalisability of the results. This analysis has also been rewarding to the candidate of this dissertation, who was surprised to see that some students can indeed be phonetically productive in that some can successfully learn to pronounce phonemes correctly with no previous practice, which encourages him to keep on investigating this phenomenon. Next time, for instance, he could try the same experiment but with no written input to see if more students improve their pronunciation or examine the progress the pupils would make in the long run if they turned out to assimilate the sounds taught.

7. Bibliography

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8. Appendices

8.1. APPENDIX A: Pronunciation Tables

Note: the asterisk in the transcriptions stands for sounds that do not exist neither in Spanish, Catalan, French, or English. In most cases they are in a spectrum between the target sound and the vowel to which the non-native speaker draws back from his or her mother tongue.

Table 1

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 1		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word			Work	Purse	Gather		Shirts	Verbal
	Student's pronunciation			/wɝk/	/prɝs/	/ˈgæðɚ/		/ʃɝts/	/ˈv*rbal/
	Time			1:50	5:39	4:00		6:27	4:20
	Word			Person	Weren't	Interviewer		Turn	
	Pronuncation mistake			/ˈpɝsən/	/ˈwerent/	/ˈɪnʈɚˌvjuɚ/		/tɝn/	
	Time			5:49	4:45	4:01		6:55	
	Word					Colors		Were	
	Pronuncation mistake					/ˈkʌlɚz/		/wɝ/	
	Time					5:59		5:15	

Table 2

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 2		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word				Working		Interview		
	Student's pronunciation				/ˈwɔɾkiŋ/		/ˈɪntəɾ.viu/		
	Time				0.45		1:45		
	Word				Person		Personality		
	Student's pronunciation				/ˈpeɾson/		/personˈaliti/		
	Time				0:53		4:03		
	Word				Work		Her		
	Student's pronunciation				/ˈwɔɾk/		/xeɾ/		
	Time				1:22		2:05		
	Word				Service		Pursue		
	Student's pronunciation				/ˈseɾvis/		/pəɾˈswi/		
	Time				3:52		4:42		
	Word				Purse				
	Student's pronunciation				/ˈpɔɾs/				

	Time				6:45				

Table 3

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 3		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Employer		Purse	Person	Employer	Tailored	First	Person
	Student's pronunciation	/əmˈplɔjɚ/		/pɜːs/	/ˈp*rsɔn/	/əmˈplɔjɚ/	/teɪl*rd/	/fɜːst/	/peRsən/
	Time	0:12		5:27	2:48	1:38	1:54	1:37	2:30
	Word			Work	Were	Colors			
	Student's pronunciation			/wɜːk/	/w*r/	/ˈkʌlɚz/			
	Time			2:44	3:32	1:57			

Table 4

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 4		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word			Purse	Work		Letter		Work
	Student's pronunciation			/pɝs/	/wɔɾk/		/ˈletɾ/		/wɔɾk/
	Time			3:45	0:37		0:22		5:48
	Word				Perfect		Intervi		Were

						ew		
Student's pronunciation				/p*rfektli/		/ˈinteɾviu/		/weɾ/
Time				2:04		8:35		8:09
Word						Cover		
Student's pronunciation						/kɔveɾ/		
Time						0:22		

Table 5

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 5		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word			Purchasing	Work		Cover	T-Shirt	Person
	Student's pronunciation			/ˈpɝtʃəs/	/woɾk/		/ˈkoveɾ/	ˈti ˌʃɝt/	/p*rson/
	Time			4:37	0:45		10:17	11:37	10:57
	Word				Person		Letter		Person
	Student's pronunciation				/peɾson/		/letəɾ/		/peɾson/
	Time				0:41		10:17		8:16
	Word								Work
	Student's pronunci								/woɾk/

	ation								
	Time								8:19

Table 6

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 6		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Leadership	Perfectionist	Purse	Person	Connectors	Letter		Personal
	Student's pronunciation	/ˈlidɚʃip/	/pɛrˈfekʃən.ist/	/pɝs/	/pɛrson/	/koˈnektɚs/	/ˈletɾ/		/ˈpɛrsonal/
	Time	1:05	0:31	1:23	0:14	1:18	0:53		1:07
	Word			Her	Worker				
	Student's pronunciation			/hɝ/	/wɔrkəɾ/				
	Time			2:01	0:41				
	Word				Work				
	Student's pronunciation				/woɾk/				
	Time				0:49				

Table 7

Student 7		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word				Work	Letters	Letter		Work
	Student's pronunciation				/wɔrk/	/ˈletɚz/	/ˈletɚr/		/wɔrk/
	Time				1:10	0:30	0:17		3.27
	Word				Were		Personality		
	Student's pronunciation				/weɾ/		/perso ˈnaliti/		
	Time				1:35		3:26		

Table 8

Student 8		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Worker		Person	Letters	Cover		Work
	Student's pronunciation		/ˈworkeɾ/		/ˈperson/	/ˈletɚz/	/ˈkɔveɾ/		/w*rk/
	Time		2nd podcast: 2:11		1st podcast: 0:45	0:52	0:52		1:05

Word				Worker				
Student's pronunciation				/ˈworkeɾ/				
Time				2nd podcast: 2:11				
Word				First				
Student's pronunciation				/ferst/				
Time				2nd podcast: 5:27				

Table 9

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 9		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Engineer	Whatever	Were	Worked	Consider	Interview	Were	
	Student's pronunciation	/ˌendʒəˈnɪɚ/	/waˈtevɚ/	/wɝ/	/wɚkt/	/konˈsidɚ/	/ˈintɚˌvju/	/wɝ/	
	Time	2nd podcast: 1:41	2nd podcast:	1st podcast:	2nd podcast:	0:21	0:35	3:03 and 5:25	

		1:15	4:10	1.44				
Word	Employer		Person	Working	Interview			
Student's pronunciation	/emˈplɔɪɚ/		/ˈpɝsən/	/wɔrkɪŋ/	/ˈintɚˌvju/			
Time	1st podcast 0:14		1st podcast: 2:55	2nd podcast: 2:15	0:24			
Word	Personality			Worker				
Student's pronunciation	/pɚsəˈnaləţi/			/wɔrkɚ/				
Time	1st podcast: 2:56			2nd podcast: 2:16				
Word	Worker			Prefer				
Student's pronunciation	/ˈwɔrkɚ/			/prɪˈf*r/				
Time	2nd podcast: 2:16			1st podcast: 1:10				
Word				Learn				
Student'				/l*rn/				

	s pronunciation								
	Time				2nd podcast: 3:43				

Table 10

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 10		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Answers	First		Cover	Your	First	
	Student's pronunciation		/ˈɑːnsərs/	/fɝst/		/ˈkɔvɚ/	/j*r, jʊr/	/fɝst/	
	Time		0:27	0:41		0:39	1:25 1:27 1:29	0:31	
	Word					Letter		Personal	
	Student's pronunciation					/ˈletɚ/		/ˈpɝsənəl/	
	Time					0:55		1:23	
	Word					Interview			
	Student's pronunci					/ˈintɚˌvju/			

	ation								
	Time					0:45			
	Word					Employers			
	Student's pronunciation					/emˈplɔɪəs/			
	Time					1:04			

Table 11

		Activity 1				Activity 2			
		[ə]		[ɜ]		[ə]		[ɜ]	
Student 11		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Better	Other		Work		Your		Work
	Student's pronunciation	ˈbetə/	/ˈoðər/		/work/		/ jʊr/		/work/
	Time	1:48	1:56		1:20		4:37		3:38
	Word		Were		Person				Person
	Student's pronunciation		/wer/		/ˈpers on/				/ˈpers on/
	Time		2:19		0:55				3:40
	Word				Working				
	Student's pronunciation				/worki n/				

	Time				1:10				
	Word								
	Student's pronunciation								
	Time								

Table 12

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 12		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Matter	Her	Purse	Working	Interview	Your	T-Shirt	
	Student's pronunciation	/ˈmatɚ/	/her/	/pɝs/	/ˈwɚkɪŋ/	/ˈɪntɚˌvju/	/jʊr/	/ˈtiː.ʃɝːt/	
	Time	2:00	2:23	4:00	1:45	3:54	4:29	11:37	
	Word	Personality		Perfect	Work	Interviewer	Interviewer		
	Student's pronunciation	/pɚsəˈnaləti/		/ˈpɝfekt/	/ˈwɚk/	/ˈɪntɚˌvjuɚ/	/ˈɪn.t*r.vjuː.ɚ/		
	Time	2:02		1:12	1:28	4:06	4.34		
	Word			First	Nurse	Communicator	Were		
	Student's			/fɝst/	/n*rs/	/kəˈmjuː.nə.keɪ.ʈɚ/	/wer/		

	pronunciation								
	Time			0:22	2:39	4:46	7:36		
	Word			Prefer		Understood			
	Student's pronunciation			/prɪˈfɝ/		/ˌʌn.dəˈstud/			
	Time			2:06		4:52			

Table 13

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 13		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Employer		Purses		Cover		Work
	Student's pronunciation		/emˈplojeɾ/		/poɾsis/		/ˈkoveɾ/		/ˈwɔɾk/
	Time		0:09		3:45		0:25		0:20
	Word				Were		Letter		Learned
	Student's pronunciation				/weɾ/		/ˈleteɾ/		/ˈleaɾn/
	Time				2:24		0:25		0:12
	Word				Service		Interview		
	Student's				/seɾˈv		/ˈinteɾ.		

	pronunciation				ais/		vju/		
	Time				2:27		0:28		

Table 14

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 14		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Personality	Purse	Person		Interview		Person
	Student's pronunciation		/pɛrsonˈaliti/	/pɝs/	/ˈpɛrson/		/ˈintəɾ.vju/		/ˈpɛrson/
	Time		0:43	4:40	0:17		0:14		6:33
	Word		Clever		Work		Properly		
	Student's pronunciation		/klever/		/ˈwoɾk/		/ˈprɔpəɾli/		
	Time		1:19		0:45		0:44		
	Word				Service		Interviewer		
	Student's pronunciation				/ˈsɛrvis/		/ˈintəɾ.vjuəɾ/		
	Time				5:01		0:57		

Table 15

Student 15		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Exercise	Rather		Person	Answer	Afternoon	Nervous	Prefer
	Student's pronunciation	/ˈesəsaɪ/	/ˈreiðer/		/ˈpɛrsoʊn/	/ˈansɚ/	/ˈafteɹnun/	/ˈnɝ.vjus/	/pɹeˈfeɹ/
	Time	1st podcast: 0:34	1st podcast: 0:40		1st podcast: 0:38	6:16	5:52	7:14	6:20
	Word	Personality			Work	Personality	Employer	First	Were
	Student's pronunciation	/pɚsəˈnaliti/			/woɹk/	/pɚsəˈnaliti/	/emˈplojeɹ/	/fɝst/	/w*ɹ/
	Time	0:39			1st podcast: 1:27	6:07	6:01	5:35	7:20
	Word				Purses		Were		Work
	Student's pronunciation				/puɹs/		/weɹ/		/woɹk/
	Time				1st podcast: 1:01		6:11		6:19

Word				Purchasing		Interview		
Student's pronunciation				/pɹtʃeisin/		/ˈintəɹ.vju/		
Time				1st podcast: 1:07		5:32		
Word				Purse				
Student's pronunciation				/pɹs/				
Time				1st podcast: 1:11				
Word				Purse				
Student's pronunciation				/pɹs/				
Time				1st podcast: 1:11				

Table 16

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 16		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Worker	Learner	Person	Interview	Colors		Work
	Student's pronunciation		/woɾkeɾ/	/ˈlɝ.nəɾ/	/ˈpeɾson/	’intər.vju/	/ˈkoloɾz/		/woɾk/
	Time		2:09	2:41	0.52	3:04	3.45		3:15
	Word		Personalities		Work		Interviewer		Skirt
	Student's pronunciation		/peɾso’nalitis/		/woɾk/		/ˈinteɾ.vju/		/skeɾt/
	Time		3:27		1:03		4:19		3:37
	Word		Learner		Worker				Person
	Student's pronunciation		/ˈlɝː.nəɾ/		/ˈwoɾkeɾ/				/ˈperson/
	Time		2:41		2:09				4:06
	Word								Personal
	Student's pronunci								/ˈpersonal/

ation								
Time								4:10

Table 17

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 17		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Perfectionist	Purses	Person		Interview		Nervous
	Student's pronunciation		/pɚˈfek.ʃon.ist/	/ˈpɝsəz/	/ˈpɚson/		/ˈintɚvju/		/ˈnɚvoʊs/
	Time		1st podcast: 1:25	2nd podcast: 4:16	2nd podcast: 1:25		2:00		3:45
	Word		Former		Perfect		Your		
	Student's pronunciation		/ˈfoɹ.mɚ/		/ˈpɚfekt/		/joɹ/		
	Time		2nd podcast: 3:17		2nd podcast: 2:06		2:39		
	Word				Service		Interviews		
	Student's pronunc				/ˈsɚvis/		/ˈintɚvjus/		

iation								
Time				2nd podcast: 2:54		3:35		
Word				Purchasing		Personality		
Student's pronunciation				/pʊɾ'tʃeisɪŋ/		/pəɾso'naliti/		
Time				2nd podcast: 4:22		3:32		
Word				Purse				
Student's pronunciation				/pʊɾs/				
Time				2nd podcast: 4:26				
Word				Were				
Student's pronunciation				/wɛɾ/				
Time				2nd podcast: 2:47				

Table 18

Student 18		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Your		Work	Cover	Better		Works
	Student's pronunciation		/dʒuɾ/		/woɾk/	/ˈkovɚ/	/ˈbeteɾ/		/woɾks/
	Time		0:07		1:43	0.18	0:32		0:29
	Word		Personality		First	Letter	Personality		Person
	Student's pronunciation		/peɾso'naliti/		/feɾst/	/ˈletɚ/	/peɾso'naliti/		/ˈpeɾson/
	Time		1:40		4:26	0:19	0:42		6:54
	Word		Teacher		Person		Interviewer		
	Student's pronunciation		/ˈtitʃeɾ/		/ˈperson/		/inteɾ'viueɾ/		
	Time		2:21		1:38		6:39		
	Word		Another		Prefer		Clever		
	Student's pronunciation		/a'noðeɾ/		/priˈfeɾ/		/ˈkleveɾ/		
	Time		5:26		4:17		6:52		
	Word		Interview						
	Student's		/ˈintəɾvj						

pronunciation		u/						
Time		5:15						

Table 19

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 19		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Worker	Rather		Worker	Worker	Cover		Worker
	Student's pronunciation	/ˈwɔɾkɚ/	/ˈraðeɾ/		/ˈwoɾkɚ/	/ˈwoɾkɚ/	/ˈkɔvəɾ/		/ˈwoɾkɚ/
	Time	1st podcast: 0:14	1st podcast: 1:51		1st podcast: 0:14	5:28	0:20		5:27
	Word		Personality		Person		Interview		Work
	Student's pronunciation		/peɾsoˈnaliti/		/ˈpeɾson/		/inteɾˈviu/		/ˈwɔrk/
	Time		2nd podcast: 1:09		1st podcast: 0:16		0:12		5:00
	Word		Former		Work		Letter		Working
	Student'		/ˈfɔrmer		/wɔrk/		/ˈletəɾ/		/ˈwor

s pronunciation		/						kɪŋ/
Time		2nd podcast: 1:37		1st podcast: 0:20		0:21		6:21
Word				Purses				
Student's pronunciation				/puɾ'seis/				
Time				2nd podcast: 2:02				
Word				Purse				
Student's pronunciation				/puɾs/				
Time				2nd podcast: 2:13				
Word				Purchasing				
Student's pronunciation				/puɾ'tʃeisɪŋ/				
Time				2nd podcast: 2:08				

Table 20

Student 20		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word		Personality	Person	Work	Interview	Interview		Work
	Student's pronunciation		/perso'naliti/	/ˈpɝ.sən/	/wɔrk/	/ˈin.tɚ.vjuː/	/ˈin.tər.vju/		/wɔrk/
	Time		1:18	0:17	1:21	2:19	4:20		11:35
	Word			Purchasing	Purses	Trousers			Person
	Student's pronunciation			/ˈpɝtʃəsɪŋ/	/ˈpoʊrsez/	/trɔzɚz/			/p'erson/
	Time			3:26	3:21	2:44			4:01
	Word			Service	Purse	Another			World
	Student's pronunciation			/ˈsɝ.vis/	/purs/	/ə'nɔðɚ/			/wɔrld/
	Time			1:56	3:43	2:50			4:03
	Word				Were	Employer			
	Student's pronunc				/wer/	/em'plɔɪɚ/			

iation								
Time				1:51	2:59			

Table 21

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 21		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Eager	Humor	Learn	Person	Cover	Your	First	
	Student's pronunciation	/ˈigɚ /	/ˈhjumoɾ/	/lɝn/	/pɐrson/	/ˈkovɚ/	/jɔr/	/fɝst/	
	Time	0:12	1:37	0:13	1:35	2:57	4:55 5:16 5:20	3:41 4:29 4:39	
	Word	Other		Person	Work	Letter		Third	
	Student's pronunciation	/ˈɔðɚ/		/ˈpɝson/	/wɔɾk/	/ˈletɚ/		/θɝd/	
	Time	1:13		1:13	3:03	2:57		5:14	
	Word	Sincerely		Service	Person	Interview			
	Student's pronunciation	/ˈsinsɚli/		/ˈsɝvis/	/p*rson/	/ˈintɚvju/			
	Time	2:25		2:15	1:34	3:02			

Word	Atmosphere			Work	Employers			
Student's pronunciation	/ˈatmos.fiɚ/			/wɔrk/	/em'plɔɪɚ/			
Time	1:50			1:42	3:17			
Word					Structure			
Student's pronunciation					/ˈstraktɚ/			
Time					3:46			
Word					Properly			
Student's pronunciation					/ˈpropɚli/			
Time					4:16			

Table 22

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 22		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Former		Service	Work	Interviewer	Afternoon		
	Student's	/ˈfɔrmɚ/		/ˈsɝvis/	/wɔrk/	/ˈintɚvju/	/ˈaftəɾnun/		

	pronunciation								
	Time	3:20		2:35	1:30	7:32	7:56		
	Word	Perfectionist		Person	Person	Better			
	Student's pronunciation	/pɚˈfekʃən.ɪst/		/pɝsən/	/persən/	/ˈbetɚ/			
	Time	0:13		0:15 & 3:00	1:50	7:44			
	Word				Learn				
	Student's pronunciation				/ˈleɚn/				
	Time				2:13				

Table 23

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 23		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Worker		Purse	Worker	Interview		Firstly	Wear (as WERE)
	Student's pronunc	/ˈwɔrkɚ/		/pɝs/	/ˈwɔrkɚ/	/ˈin.tɚ.vju/		/ˈfɝstli/	/ˈweɚ/

iation								
Time	1st podcast: 0:57		1st podcast: 4:30	1st podcast: 0:57	2:32		2:34	2:40
Word	Understand		Person	Work	Proper		Perfect	Shirts
Student's pronunciation	/ˌʌn.dəˈstand/		/ˈpɝ.sən/	/wərk/	/ˈprɒpɚ/		/ˈpɝfekt//	/ʃirts/
Time	1st podcast: 2:26		2nd podcast: 1:09	1st podcast: 0:58	2:41		2:43	3:03
Word	Disaster		Service	Purses	Employer			Dirty
Student's pronunciation	/di'sastɚ/		/ˈsɝ.vis/	/ˈpursəs/	/em'plɔɪɚ/			/ˈdiɚti/
Time	1st podcast: 2:57		2nd podcast: 1:35	2nd podcast: 2:38	3:19			4:05
Word	Personality			Purchasing	Shower			
Student's pronunciation	/pɚsən'aliti/			/pʊr'tʃeɪziŋ/	/ˈʃaʊ.ɚ/			
Time	2nd podcast:			2nd podcas	3:57			

	1:10			t: 2:43				
Word				Purse				
Student's pronunciation				/purs/				
Time				2nd podcast: 2:48				
Word				Were				
Student's pronunciation				/wer/				
Time				2nd podcast: 1:29				

Table 24

		Activity 1				Activity 2			
		[ɚ]		[ɝ]		[ɚ]		[ɝ]	
Student 24		Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
	Word	Worker	Another		Learn		Answer		Working
	Student's pronunciation	/ˈworkɚ/	/aˈnoðeɾ/		/ˈleaRn/		/ˈansəɾ/		/ˈwoɾkin/
	Time	1st podca	2nd podca		1st podca		6:03		4:55

	st: 0:41	st: 0:18		st: 0:18				
Word				Worker				Worlds
Student's pronunciation				/wɔrkɚ/				/wɔrlds/
Time				1st podcast: 0:43				5:32
Word				Work				Work
Student's pronunciation				/wɔrk/				/wɔrk/
Time				2nd podcast: 0:34				6:10
Word				Worker				Learn
Student's pronunciation				/ˈwɔrkɚ/				/leaRn/
Time				1st podcast: 0:41				7:17

8.2. APPENDIX B: Jeffersonian Transcripts

S1 Li:ke (.) I remember you that (.) it's a formal meeting ↑ (.) and you::r (.) objec=objective ↑ (.) is to: (.) impress (.) the:: (.) your interviewer ↗ (.) that you are a good candidate for that job↗

S2 We think ↗ that e:::h ↘ (.) he or she ↑ should e:::h ↘(.) show her or his best ↗ (.) hu:::h ↘ (.) confidence↘

S3 Were:↗ you given the chance to work with us↘ (.) how↗ would you give (.) a::n optimal service to the client↘

S4 Were ↑ (.) I:: ↓ (.) accepted ↑ (.) I would be very proud ↗ of working in your company ↘

S6 I would say↘ (.) to: (.) her ↑ or to↘ him↑ tha:t↘ is a very nice purse ↗

S7 When ↗ you given the chance↗ to work with us↘ (.) how will you give an optimal service to the client?

S9
1 Were you given the chance↗ to work with us ↗ (.) how would (.) you give ↗ an optimal service to the client↓
2 Were we offered ↗ to apply for (.) any enterprise; it would be e:h (.) it would be interesting ↗ to think about your body language↘
3 Were I offered to talk↗, I think that (.) I would (.) well (.) it would be very interesting for me↗ to: (.) to speak (.) em: (.) yes (.) to speak many different languages↘

S10
1 What would you describe↗ as (.) your (.) greatest weakness ↘
2 You have to write your personal details ↗ (.) your na:me ↘ (.) your a:ge ↘

S11
1 I: ↘ (.) think tha:t (.) I don't know they: like they: ↘ (.) they like↘ (.) they were ↗ like bad with me↗ because I: worked a lot and they paid me e:m low money↘
2 Should I have the opportunity to work with you ↗ (.) e:m I would be the best hard working↘ (.) in your↘ (.) in your company↘

S12
1 I prefer to be with a person that likes ↘ (.) uh: (.) his or her work ↗ to have something in common↘
2 If I: were the interviewer ↘ (.) or the employer ↘ (.) I would huh (.) have this very present at the time of the interview↘

S13 Were your given the chance to work with us↗ (.) how would you give an optimal service to the client?

S15 1 What are your (.) key strengths?

2 Were I (.) in your position↗ (.) I would (.) eh:: (.) answer ↗ that you prefer to work with people∞↘

3 If I were you ↗, I'd try to be:: ↘ (.) to be relaxed↘

S17 1 Were you↗ given the chance to work with us ↗ (.) how would you: give an optimal service to the client↘

2 Also↗ you show all your abilities↘

S18 1 What is your name↘

2 If you have a cover letter ↗ (.) the interviewer knows more things about you↘ (.) like personality (.) or (.) eh:: ↘ (.) your: before works↘

S20 Were you given↗ the chance to work with us ↘ (.) how would you give an optimal service to the client?

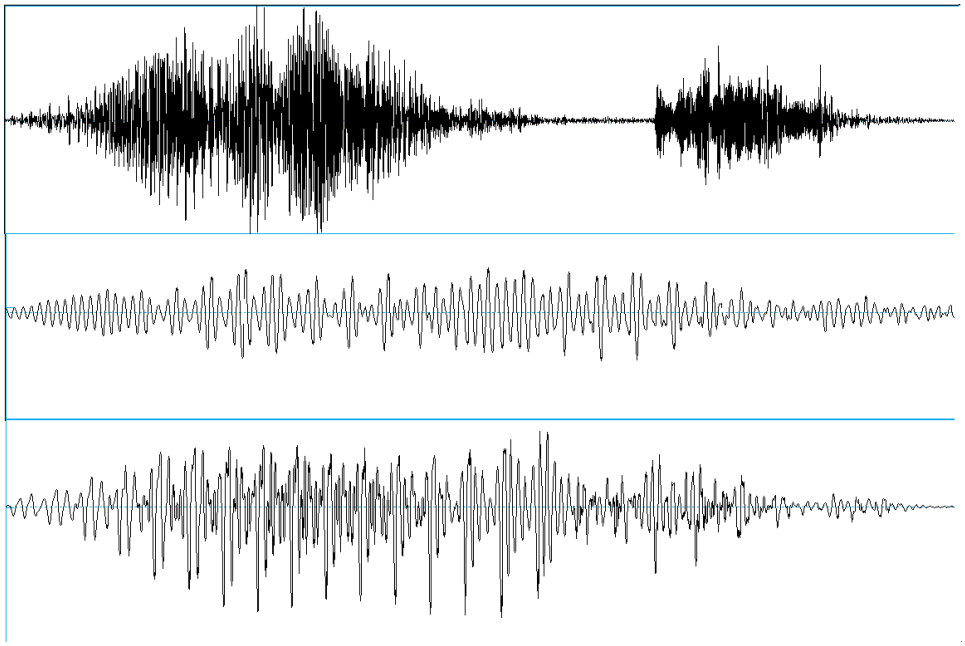
S21 1 On the first paragraph ↗ (.) uh: (.) I recommend you to: to show your reasons for why are you applying for the jo:b↗

2 It is more important to specify your experience in the second paragraph ↗ (.) where you have to introduce your experie:nce↘ (.) your ski:lls↘ (.) er:: your strengths↘ and your idioms is very important↘

S23 Were you given the chance to work with us ↘ (.) how would you give me an optimal service to the client?

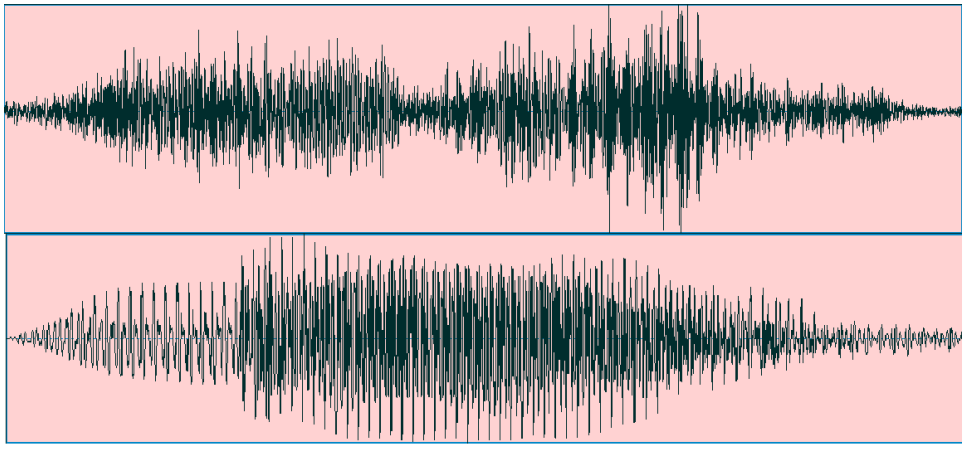
8.3. APPENDIX C: Phonetic Waveforms

Image 1



The first waveform is the student's voice saying WORK in Podcast 1, the second one being from Podcast 2, and the third one a native speaker's.

Image 2



The first waveform is the student's voice saying LEARN as /ˈleaRn/. The second one is a native speaker's voice saying /lɜ˞n/.

8.4. APPENDIX D: Words in the Paper Strips: Phonetics Activity

PERSON WORK WERE

PERSONALITY PURSE

AIR HURT GARDEN

HARD DIRT GIRL EAR

BURDEN STIR PERFECT

PERFORM WORD RATHER

BURGER TRUTH CERTAIN

ART PURCHASE IRK

8.5. **APPENDIX E: International Phonetic Alphabet**[1]

THE INTERNATIONAL PHONETIC ALPHABET.

(Revised to 1951.)

		Bi-labial	*Labio-dental*	*Dental and Alveolar*	*Retroflex*	*Palato-alveolar*	*Alveolo-palatal*	*Palatal*	*Velar*	*Uvular*	*Pharyngal*	*Glottal*
CONSONANTS	*Plosive*	p b		t d	ʈ ɖ			c ɟ	k g	q ɢ		ʔ
	Nasal	m	ɱ	n	ɳ			ɲ	ŋ	ɴ		
	Lateral Fricative			ɬ ɮ								
	Lateral Non-fricative			l	ɭ			ʎ				
	Rolled			r						ʀ		
	Flapped			ɾ	ɽ					ʀ		
	Fricative	ɸ β	f v	θ ð | s z | ɹ	ʂ ʐ	ʃ ʒ	ɕ ʑ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
	Frictionless Continuants and Semi-vowels	w | ɥ	ʋ	ɹ				j (ɥ)	(w)	ʁ		

VOWELS	*Front*	*Central*	*Back*
Close	(y ʉ u)	i y ɨ u	ɯ u
Half-close	(ø o)	e ø ɘ	ɤ o
Half open	(œ ɔ)	ɛ œ ɜ	ʌ ɔ
Open	(ɒ)	ɐ	ɑ ɒ

(Secondary articulations are shown by symbols in brackets.)

OTHER SOUNDS.—Palatalized consonants: tʲ, dʲ, etc.; palatalized ʃ, ʒ: ʃʲ, ʒʲ. Velarized or pharyngalized consonants: ɬˠ, ɑˠ, sˠ, etc. Ejective consonants (with simultaneous glottal stop): p', t', etc. Implosive voiced consonants: ɓ, ɗ, etc. ɾ fricative trill. ʊ, ɷ (labialized θ, ð, or s, z). ʕ, ʒ (labialized ʃ, ʒ). ʇ, ʗ, ʖ (clicks, Zulu c, q, x). ɺ (a sound between r and l). ɳ Japanese syllabic nasal. ʂ (combination of x and ʃ). ʍ (voiceless w). ɪ, ʏ, ʊ (lowered varieties of i, y, u). ɜ (a variety of ə). ɵ (a vowel between ø and o).

Affricates are normally represented by groups of two consonants (ts, tʃ, dʒ, etc.), but, when necessary, ligatures are used (ʦ, ʧ, ʤ, etc.), or the marks ‿ or ◡ (t͡s or ts̆, etc.). ‿ ◡ also denote synchronic articulation (m̆n̆ = simultaneous m and ŋ). c, ɟ may occasionally be used in place of tʃ, dʒ, and ʒ, 2 for ts, dz. Aspirated plosives: ph, th, etc. r-coloured vowels: eɹ, aɹ, oɹ, etc., or eʴ, aʴ, oʴ, etc., or e˞, a˞, o˞, etc.; r-coloured ə: əɹ or əʴ or ɹ or ə˞ or ɚ.

LENGTH, STRESS, PITCH.— : (full length). · (half length). ' (stress, placed at beginning of the stressed syllable). ˌ (secondary stress). ˉ (high level pitch); ˍ (low level); ˊ (high rising); ˎ (low rising); ˋ (high falling); ˏ (low falling); ˆ (rise-fall); ˇ (fall-rise).

MODIFIERS.— ̃ nasality. ̥ breath (l̥ = breathed l). ̬ voice (s̬ = z). ʰ slight aspiration following p, t, etc. ʷ labialization (n̪ = labialized n). ̪ dental articulation (ṯ = dental t). ʲ palatalization (ż = ʒ). ̝ specially close vowel (e̝ = a very close e). ̞ specially open vowel (e̞ = a rather open e). ̺ tongue raised (e̺ or e̞ = e̝). ̻ tongue lowered (e̻ or e̝ = e̞). ̟ tongue advanced (u̟ or u̟̞ = an advanced u, t̟ = t̪). ̠ or ˗ tongue retracted (i̠ or i˗ = ɨ˗, t̠ = alveolar t). ̹ lips more rounded. ̜ lips more spread. Central vowels: ɪ̈ (= ɨ), ʉ̈ (= u), ə̹ (= ɵ), ə̜ (= e), ë, ö. ̩ (e.g. n̩) syllabic consonant. ̯ consonantal vowel. ʃʶ variety of ʃ resembling s, etc.

[1] This notation has been taken from Akamatsu, T. A critique of the IPA Chart. Department of Linguistics and Phonetics. *The University of Leeds*, 19, 7-45.

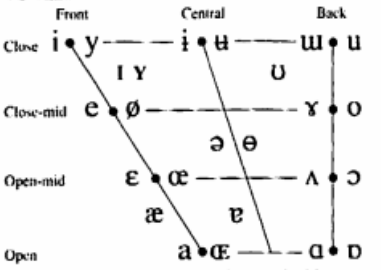
THE INTERNATIONAL PHONETIC ALPHABET (revised to 1989)

CONSONANTS

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			
Ejective stop	pʼ			tʼ		ʈʼ	cʼ	kʼ	qʼ		
Implosive	ɓ ɗ			ɗ			ʄ	ɠ	ʛ		

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

OTHER SYMBOLS

- ʍ Voiceless labial-velar fricative
- w Voiced labial-velar approximant
- ɥ Voiced labial-palatal approximant
- ʜ Voiceless epiglottal fricative
- ʢ Voiced epiglottal fricative
- ʡ Epiglottal plosive
- ɕ ʑ Alveolo-palatal fricatives
- ʘ Bilabial click
- ǀ Dental click
- ǃ (Post)alveolar click
- ǂ Palatoalveolar click
- ǁ Alveolar lateral click
- ʗ Alveolar lateral flap
- ʧ Simultaneous ʃ and x
- ʒ Additional mid central vowel

Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary: k͡p t͡s

DIACRITICS

̥	Voiceless	n̥ d̥	̹	More rounded	ɔ̹	ʷ	Labialized	tʷ dʷ	̃	Nasalized	ẽ
̬	Voiced	s̬ t̬	̜	Less rounded	ɔ̜	ʲ	Palatalized	tʲ dʲ	ⁿ	Nasal release	dⁿ
ʰ	Aspirated	tʰ dʰ	̟	Advanced	u̟	ˠ	Velarized	tˠ dˠ	ˡ	Lateral release	dˡ
̤	Breathy voiced	b̤ a̤	̠	Retracted	i̠	ˤ	Pharyngealized	tˤ dˤ	̚	No audible release	d̚
̰	Creaky voiced	b̰ a̰	̈	Centralized	ë	~	Velarized or pharyngealized	ɫ			
̼	Linguolabial	t̼ d̼	̽	Mid centralized	e̽	̝	Raised	e̝	(ɹ̝ = voiced alveolar fricative)		
̪	Dental	t̪ d̪	̩	Syllabic	ɹ̩	̞	Lowered	e̞	(β̞ = voiced bilabial approximant)		
̺	Apical	t̺ d̺	̯	Non-syllabic	e̯	̘	Advanced Tongue Root	e̘			
̻	Laminal	t̻ d̻	˞	Rhoticity	ə˞	̙	Retracted Tongue Root	e̙			

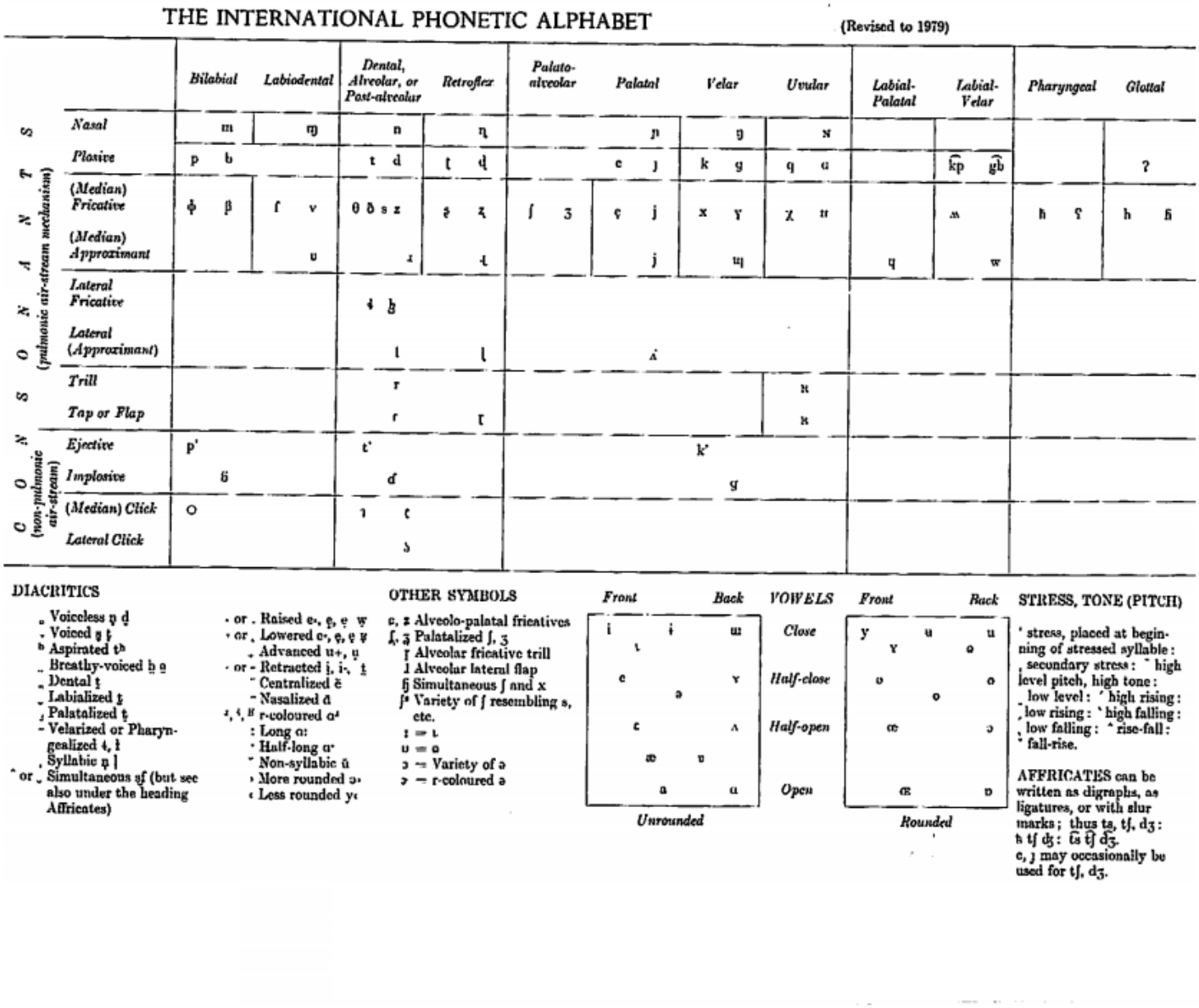
SUPRASEGMENTALS

- ˈ Primary stress
- ˌ Secondary stress ˌfoʊnəˈtɪʃən
- ː Long eː
- ˑ Half long eˑ
- ̆ Extra-short ĕ
- . Syllable break ɹi.ækt
- | Minor (foot) group
- ‖ Major (intonation) group
- ‿ Linking (absence of a break)
- ↗ Global rise
- ↘ Global fall

TONES & WORD ACCENTS

LEVEL		CONTOUR	
˥ or ̋	Extra high	˩˥ or ̌	Rising
˦ or ́	High	˥˩ or ̂	Falling
˧ or ̄	Mid	˧˥ or ᷄	High rising
˨ or ̀	Low	˩˧ or ᷅	Low rising
˩ or ̏	Extra low	˥˩˧ or ᷈	Rising-falling etc.

↓ Downstep
↑ Upstep



8.6. APPENCIX F: Jeffersonian Notation [2]

(.)	Micropause, less than 0.2 seconds
:::	Prolongation of a sound
=	Latching
↑ or ?	Rising pitch or intonation
↗	Slightly rising pitch
↘	Slightly falling pitch

[2] This notation has been taken and adapted from Jefferson, G. (1984). Transcript Notation. In Atkinson, J. and Heritage, J. (Eds.), *Structures of Social Action: Studies in Conversation Analysis* (pp. ix-xvi). New York: Cambridge University Press.

↓	Falling pitch
∞	Prolongation of an utterance
Student	S
word	Emphasis or stress

8.7. APPENDIX G: Podcasts