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Pronunciation Instruction:

Improving the Intelligibility and Comprehensibility of EFL learners in Mexico

and the Relationship between Comprehensibility and Foreign Accent

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… To my parents Francisco Amieva and Elida Palacios

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ABSTRACT

Can pronunciation instruction account for the improvement of intelligibility and comprehensibility in an English as a Foreign Language (EFL) setting? Does having a strong foreign accent affect the understanding of a speaker? The present study seeks for these answers by adapting Derwing, T., Munro, M. and Wiebe, G. (1998) study in an EFL setting, who showed that a group of ESL learners receiving explicit pronunciation training improved in terms of comprehensibility. In order to answer the second question, the current study is also adapted from Munro, M, and Derwing. T. (1999) who found supporting evidence to show that having a foreign accent does not affect the speakers' comprehensibility.

I had 8 native English-speakers (NESs) listening to the effects of two types of instruction (explicit pronunciation and no specific pronunciation instruction) on the speech of 2 groups of EFL learners. Extemporaneously produced narratives were recorded at the beginning (time 1) and the end of a 12-week (time 2) course of instruction. 8 NES listeners judged the EFL learners' speech productions and rated them in terms of intelligibility, comprehensibility and foreign accent. After analyzing the scores obtained from both groups at time 1 and time 2, I found that none of the groups showed any improvement in terms of intelligibility and comprehensibility. Contrary to my expectations, I also found a positive correlation between foreign accent and comprehensibility, which means that it is likely that a person with strong foreign accent would be very difficult to understand. I argue that the amount of time and input are some of the issues account for these findings.

CONTENT

CHAPTER I: INTRODUCTION

1.1 General Overview

Throughout my academic development, I have given a great importance to pronunciation. As an adult in interaction with Native English Speakers (henceforth, NESs) I have also witnessed the importance of this feature to my interlocutors. As a professor of English I used to believe that a person could acquire a good pronunciation at any age, and if they did not have a native-like pronunciation they were going to be very difficult to understand. After studying theories regarding language acquisition (such as the Critical Period Hypothesis in chapter 2) I started to disregard such beliefs. As a consequence, I began to believe that a person does not need to be perfect in his/her pronunciation in order to be understood. However, I wanted to study the possibility of teaching pronunciation to adults, and observe if this instruction could bring some benefit to the learner in terms of intelligibility and comprehensibility.

In my years of teaching English it never occurred to me the idea that pronunciation could be taught. I used to believe that learning the pronunciation of any language was inherent in the process of learning the language in general. This means that by having the sole input of the professor using the language, someone could acquire the phonological aspects of it.

It was perhaps from my experience as a language learner that I used to believe that there was no need to teach pronunciation. In my years of learning English (my second language), I do not remember being explicitly taught how to pronounce words. I remember learning English by singing, reading Clifford stories and watching cartoons in the target language.

However, what does the term 'pronunciation' include? How many times have I heard the comment from English learners 'I have a bad pronunciation' or 'I don't know how to pronounce words in English'? These concerns tell us that knowing how to produce the target language gives the learner a sense of confidence which helps the learning of it and it is for this reason that it becomes important to address it.

It seems to me, that when a person thinks of the word 'pronunciation' the aspects regarding the production of certain sounds of the target language are triggered. This is supported by Derwing (2003), who concerned with the adult immigrants' perception of their own pronunciation, conducted a study where she asked 100 ESL immigrants what they perceived their problems in pronunciation to be. Derwing (2003) found that when the participants were asked to identify their major pronunciation problems; 79% of the participants related their problems to their difficulty to produce sounds like 'th' the distinction between 'l' and 'r' and other consonant sounds. However, pronunciation does not focus only on achieving the perfect pronunciation of consonant and vowel sounds.

If seeking a perfect pronunciation should not be the goal of language learners, what should it be? According to Morley (1991), the learner needs only to be intelligible in order to communicate effectively. Intelligible pronunciation is essential for the act of communicating; learners should not be focused on being perfect pronouncers of English, but intelligible, confident users of the target language. It is for this reason that it *is the objective of this thesis project to show that after explicit pronunciation training a group of people can improve in terms of intelligibility and comprehensibility.* Furthermore, I want to show that there is not *always a positive correlation between foreign accent and*

comprehensibility, which means that a *speaker's heavy accent does* not always relate to a bad comprehensibility.

The present thesis project is based on a study carried out by Derwing, Munro, and Wiebe (1998). They worked with learners enrolled in an English as a Second Language (ESL) program in a university in Canada. After teaching pronunciation explicitly to a group of these students they found that comprehensibility and foreign accent improved significantly. I want to show in the current study that a group of Spanish speakers enrolled in a English as a Foreign Language program can also show an improvement in intelligibility and comprehensibility. Although foreign accent and its reduction through pronunciation instruction was one of the objectives in Derwing et al. (1998)'s study, this study focuses rather on the relationship between foreign and comprehensibility.

For this reason, this thesis is addressed to those language professors teaching in an EFL setting, especially to those professionals who have an interest in the role played by the pronunciation of any language and its teachability.

1.2 Statement of the Problem

The learning of English has become central to education in Mexico. Twenty years ago, English was studied by people who were seen as privileged; to learn English was a synonym of giving oneself a luxury. As a student and as a teacher of EFL, I have witnessed the importance that English has acquired over the years. The popularity that EFL has gained results from the assumption that

if one does not speak English, one will not be able to get a good and well-paid job and succeed in professional life. As a result, the organism in charge of providing public education to Mexican people known as the *Secretaría de Educación Pública* (SEP), has included English in the curriculum of basic education. For this reason, EFL has become a mandatory subject in schools in Mexico from junior high (7th grade) to college. Recently the SEP has announced that English will be mandatory in kindergarten, elementary and secondary school by 2012 throughout Mexico (Martínez, 2009)

However, learning EFL does not only focus on the idea of knowing that 'table' means 'mesa' in Spanish, or that the names of colors in English are to be learned in a memorized way by translating from Spanish to English, such as 'rojo-red' or 'azul-blue'. Learning EFL means to be able to communicate in the target language, to listen to any speech and being able to get the general idea, to read and to understand what the reading was about, and to write a sentence to express one's ideas: effective communication is what learning a language is about (Morley, 1991).

Before I move on to point the difference between ESL and EFL I want to draw the reader's attention to the more recent use of English; that of English as an international language (henceforth EIL). According to Jenkins (2006) EIL is defined as the 'contact language used only among non-mother tongue speakers' (p. 160). On this regard, English learners' purpose is no longer to communicate with Native English Speakers (NESs), but to other Non-Native English Speakers (NNESs), who shall not continue to be labeled as 'foreign' speakers but as 'international' speakers of English, considering that the EIL

speakers have outnumbered the amount of ESL and EFL speakers altogether (Crystal, 2007).

For the above mentioned reason, learning ESL, which is taught in English-speaking countries to non-native speakers of English; EFL, which is taught in countries where English is not spoken as a mother tongue or a second language; or as an International Language (EIL), requires from the learner the ability to be able to communicate. According to Morley (1992), the objective of teaching any language, should be to empower the learner by giving them the necessary tools that can be used in an effective communicative setting

In spite of the fact that 'being able to communicate' with other NESs is a realistic goal in an EFL context, and with other Non-native speakers (e.g. other learners of English) in the EIL paradigm, it is important to consider the aspects of the language that have to be taught and how they are going to be presented to the learner. Throughout the teaching methods of foreign languages, there have been changes in regards to the importance given to these aspects, such as the four skills that constitute the teaching of a language such as: reading, writing, listening, and speaking.

Even though it is difficult to label one of these skills as the most important, teaching a language requires the presence of the four language skills above mentioned in order to be able to serve its communicative purpose. Pronunciation though, has been an ability which has been undervalued within the history of language teaching. Compared to the study of grammar and vocabulary (e.g. the Grammar Translation Method starting in the 1840s), pronunciation began to be studied systematically before the beginning of the

twentieth century (Celce-Murcia, M., Brinton, D., Goodwin, J., 1996). It is for this reason that the objective of the present study to emphasize the role of pronunciation instruction through the ability of speaking.

The reason why the speaking skill has been chosen as the most important ability to be developed comes from the idea I sustain that it is through the oral production of the target language that a person can label himself/herself as a successful language learner. Also, because it is through this ability that a person can attain his ultimate goal when learning a foreign language: to express ideas that can reach a larger number of people, to interact with other NESs or NNESs and to communicate.

In addition, there is still a concern regarding pronunciation on the learners' behalf related to attitudes. When asking a group of 100 ESL immigrants learners about their perceptions of listeners' attitudes towards their accents, 53% reported that they thought that NESs (e.g. Canadian) would respect them better if they pronounced English well (Derwing, 2003). In this sense, Derwing (2003)'s study backs up my concern of paying more attention to pronunciation as one of the learners' needs.

In order to fulfill the learners' needs regarding pronunciation, what should be taught? And most importantly what should be the objective of it? As mentioned earlier, students need be intelligible in order to engage in an effective communication (Morley, 1991), and even more, they need to be comprehensible. As it will be described in Chapter 2, the terms intelligibility and comprehensibility co-exist as they refer to the interlocutors' ability to decode and respond to a message.

Intelligibility and comprehensibility as the desired goal of pronunciation could be achieved through pronunciation teaching. However, I perceive a gap between pronunciation teaching and the attainability of intelligibility and comprehensibility. How can it be expected to develop the speakers` intelligibility and comprehensibility if the component to achieve it does not exist? For this reason pronunciation instruction can improve a student's chance of achieving this goal.

In my experience as an EFL instructor, I have witnessed the lack of importance given to pronunciation. Furthermore, most of the times the syllabus focuses only on vocabulary, grammatical structures and reading abilities where the main role is played by grammar.

By adapting a study carried out by Derwing, Munro and Wiebe (1998) where they show that after explicit pronunciation instruction a group of students improve in terms of intelligibility and comprehensibility, I will try to show that spending some time on the explicit instruction of pronunciation in the EFL classroom can significantly improve the attainability of intelligibility and the speakers' comprehensibility in the foreign language context. One of the reasons why I decided to undertake their study comes from the idea to support the fact that pronunciation can be taught and that it can yield results in favor of intelligibility and comprehensibility.

Particularly, the present study focuses on teaching pronunciation and its effects. Its main concern is with the improvement of intelligibility, comprehensibility and its relation to accentedness. This research will contribute to the area of foreign language teaching by informing about the possibilities of

pronunciation improvement after explicit pronunciation instruction and the relation existing between comprehensibility and foreign accent in an EFL context.

I expect that this study will support my claim that teaching pronunciation is effective in terms of the improvement of intelligibility and comprehensibility. Now that I have stated my argument and the purpose of the current study I will present the research questions and hypothesis.

1.3 Research Questions and Hypotheses

Since this research reduplicates the research methodology used in a previous study, it is based on the methodological precedents of Derwing, et al. (1998) and Munro and Derwing (1999). Therefore, it will be reviewed in more detail later in Chapter 3. However, before presenting the research questions of this study, the reader is briefly introduced to the general design of my study.

The experiment was carried out with Mexican young adults studying EFL at the same level. There were two groups, one of them will receive an explicit pronunciation instruction and the other one will not. Participants of both groups will be recorded once before and after the instructions takes place (time 1 and time 2). These are the independent variables. The dependent variables of this study, which are expected to change according to the instruction and time of recording will be the intelligibility and comprehensibility and its correlation to accentedness.

In order to find out if intelligibility and comprehensibility improved after explicit pronunciation instruction, as showed in the original study, the following two questions were addressed:

1. ***Were students from the experimental group more intelligible at time 2 than at time 1 compared to students from the control group?***

2. ***Were students from the experimental group more comprehensible at time 2 than at time 1 compared to the students from the control group?***

For both questions, it is expected to find a significant improvement within these two variables. That is, students from the experimental group will be more likely to get better scores on the intelligibility and comprehensibility tasks at time 2 than students from the control group at the same time.

Additionally and with the objective to understand if there is a correlation between foreign accent and its repercussion to the learner's intelligibility, the following question will be asked:

3. ***Did the degree of foreign accent affect the experimental and control group's intelligibility?***

Since this study is concerned with the improvement of intelligibility, comprehensibility and its relation to accentedness as a result of explicit pronunciation instruction, a within- and a cross-reference-group comparison will be carried out. The purpose of the cross-reference comparison is to find out if the experimental group and the control group are comparable at the beginning of the study, which will mean that any change perceived during the post-test would have to be product of the presence of pronunciation training (in the case of the experimental group). The within-group comparison will be used to observe if the experimental group improves after pronunciation training (time 2), and if this improvement is significant compared to the control group. Also, addressing the third question will help to identify a correlation between strong foreign accent and intelligibility.

1.4 Assumptions

It is under the assumption that language learners become aware of their pronunciation and therefore desire to be able to improve their production of the target language in any given communicative act, e.g. conversation, speech, etc that this study was carried out.

In this sense, my first assumption is that pronunciation can be taught. As has been shown by Munro and Derwing (1999) and Derwing, Munro and Wiebe (1998) speakers have improved on their intelligibility, comprehensibility and foreign accent after explicit pronunciation instruction. As teachers we cannot expect that our students learn pronunciation by osmosis; they need their

attention to be drawn to the important aspects of the pronunciation of the target language.

As a consequence, my second assumption, resulting from the study carried out by Derwing et al. (1998), is that intelligibility and comprehensibility can be improved. This requires the language professor to be acquainted with the features of the sound system of the language, such as the segmental (pronunciation of vowels and consonants) and suprasegmental (intonation, rhythm, sentence stress) aspects of English.

My third assumption is that the time devoted to pronunciation training plays a determining role in the attainability of intelligibility and comprehensibility. Learners' production cannot change without time devoted to practice. As a result, if the students from the control group improve in terms of intelligibility and comprehensibility due to their contact with the target language, or any other exposure to it, it is assumed that the experimental group will improve even more due to the explicit pronunciation instruction they will receive.

Finally, I assume that comprehensibility and foreign accent are variables that are not positively correlated. After observing Munro et al. (1999)'s results I believe that a person with a very strong foreign accent can be comprehensible enough to be able to communicate effectively.

After posing my assumptions regarding the current study, I will follow to present the possible outcomes of my research design.

1.5 Possible Outcomes

Taking into consideration the results obtained in Derwing, et al.'s (1998) study, I anticipate that the experimental group will experience a significant improvement in intelligibility and comprehensibility as a result of pronunciation instruction. In addition, I do not expect to observe differences in the results obtained by the students from the control group.

As a result of my own successful interaction with non-native speakers with a strong foreign accent, I expect to find a negative correlation between the speakers' foreign accent and intelligibility. In this regard I predict that if the speakers of the current study are rated as having a strong foreign accent, they will not be rated the same on comprehensibility, such results were found in Derwing et al. (1998)' study.

After having established the purpose of my study, as well as the research questions and arguments I will proceed to introduce the reader briefly to the organization of the present thesis project.

Before presenting the setup of my study, I will first review the related literature which provide the theoretical foundations for the present study. Hence, the following chapter will comprise the definitions of basic concepts such as: intelligibility, comprehensibility and foreign accent. I will also explain the relationship between these three concepts and research carried out in this area. The following chapter will also present the role that pronunciation has played within the emerging of teaching methods and how these have developed according to the learner's needs. Finally, two approaches focused on pronunciation will be described. These approaches target the instruction of two

major areas in the phonology of a language. Its importance in the attainability of intelligibility, comprehensibility and accentedness will be supported by research carried out in this area.

CHAPTER II: LITERATURE REVIEW

2.1   General Overview

This review of literature will present relevant information that is needed to understand and support the present study. By the end of the first section (2.2), the reader will have a better understanding of the basic concepts that are fundamental for the development of this research (intelligibility, comprehensibility and foreign accent) as well as the relationship between these concepts (2.2.1).

Within this chapter, the reader will be presented with information related to the reasons why intelligibility is important as a goal of the learner (2.2.2). In addition, the chapter presents the role that teaching pronunciation has played within different teaching methods (2.3), the role of communicative competence (2.3.1), its relation to pronunciation (2.3.2) and finally, the two main types of instruction carried out in previous research (2.4).

By the end of this chapter, the reader will be informed of the two main features in pronunciation instruction (segmental and suprasegmental features), which combined will be the syllabus of the training on pronunciation that will be given to the participants of this study.

2.2   Intelligibility, Comprehensibility, and Foreign Accent

Intelligibility, comprehensibility and foreign accent are the three concepts which are fundamental for the present study, as it is their teachability. These are concepts that can only exist when the communicative act is taking place, that is,

in the presence of a speaker and a listener. This idea also presupposes the existence of a speech uttered by a speaker which can be labeled as intelligible, comprehensible or accented. For this reason, this first section will provide the reader with some definitions of the aforementioned concepts and the relationship among them.

Around the core concepts of the current research, there are two acronyms that need to be explained since they will be used throughout this review of literature: first language (L1) and second language (L2). According to Crystal (2007), L1 is used to refer to the people who learned a variety of English (or any other language) as a mother tongue or first language. Meanwhile, in the case of English, L2 makes reference to people who learned English as a Second Language, in addition to their mother tongue (E.g. Spanish). Therefore, a L1 community will refer to a group of L1 speakers of English; those who learned English as a foreign or second language will be the components of a L2 community of speakers of English.

As was stated in Chapter 1, the goal of learning a foreign language should be to be able to communicate in the target language. Effective communication is, in fact, the purpose of any communicative act. According to Richards and Rodgers (2006), effective communication is sought through comprehensible pronunciation, in other words, being intelligible.

Intelligibility is a notion that has become central to the teaching of pronunciation (Field, 2005). Field defines it as "the extent to which the acoustic-phonetic content of the message is recognizable by a listener" (p. 401); that is, the speakers' production being deciphered by the listener. In Kenworthy's

(1987) words, intelligibility is the goal of teaching pronunciation, as opposed to native-like pronunciation, and it is defined in its broader sense as "being understood by a listener at a given time in a given situation" (p. 13). Munro and Derwing (1999) define it as "the extent to which a speaker's message is actually understood by the listener" (p. 289). These three definitions include the aspect of understandability as the only requirement of being intelligible, but it actually signals the fact that the speech production of the speaker qualifies in order to function in a real-life situation with his/her command of the language.

Similarly, *comprehensibility* is expressed by the listener's judgment and how difficult it is to understand L2 speech production; "it is a subjective assessment of ease or difficulty of comprehension as opposed to a measure of actual intelligibility" (Derwing, Munro & Wiebe, 1998, p. 396).

As the definitions mentioned above express it, intelligibility is a property of the speaker, whereas comprehensibility is a judgment made by the listener in regards to his/her ability to understand the speaker. Within the field of World Englishes (WE), Smith and Nelson's (1985, as cited in Pickering, 2006) tripartite definition of intelligibility, comprehensibility and interpretability is more commonly accepted. In this sense, intelligibility comprises the ability of the listener to recognize individual words that constitute an utterance, whereas comprehensibility refers to the listener's ability to understand the utterance in a given context. On the other hand, interpretability is the listener's ability to decipher the speaker's intentions behind the uttered words and ideas. That is, both intelligibility and comprehensibility co-exist as long as there is a speaker and a listener in a given situation. For the purpose of this study, Smith and Nelson's definitions of intelligibility and comprehensibility will be followed.

Intelligibility is also related to another important variable that has been the focus of numerous pronunciation studies: *accentedness* or *foreign accent*. According to Derwing et al., (1998) foreign accent "refers to the extent to which a listener judges second language speech to differ from the norms" (p. 396). Derwing and Munro (2005) define it as the listener's perception of how different a speaker's accent is from that of the L1 community. Flege (1987) defines it as the perceived discrete and general differences that make a n-native speaker differ from that of a native speaker. Since the definitions presented are straightforward in terms of the definition given to foreign accent, I will use the term to refer to the language spoken by L2 speakers, that present perceived differences in its production in relation to any variety of English, E.g. Australian English, British English, Us English, etc.

Recently, intelligibility, comprehensibility and accentedness have been the main foci of pronunciation studies. There has been a particular interest in the correlation existing among them and their hierarchy. In order to demonstrate which of the aforementioned variables is more important Munro and Derwing (1999), found that even when speakers have a heavy accent they can be perfectly intelligible, something which will be tested in the present study. They also found that there is a correlation between the above mentioned variables where a stronger correlation was drawn between intelligibility and comprehensibility than between intelligibility and foreign accent. Their findings suggest a hierarchy of importance where the main role is played by intelligibility, then comprehensibility, with accentedness having the least important consideration. This finding empirically demonstrates that "the presence of a strong accent does not necessarily result in reduced intelligibility or

comprehensibility" (Munro and Derwing, 1999, p. 302), an idea that triggered the carrying out of the present study.

After having explained the concepts of intelligibility, comprehensibility and accentedness, three studies will be discussed in order to establish the relationship existing among these concepts.

2.2.1 Relationship between Intelligibility, Comprehensibility and Foreign Accent

As presented in the previous section (2.2), intelligibility has commonly been investigated along with two other variables: comprehensibility and accentedness. Most of these studies have focused on the phonological aspects of English and the contribution that the production of specific sounds and features such as intonation and rhythm have on intelligibility, comprehensibility and foreign accent (Rajadurai, 2007). Researchers, Derwing and Munro, through a series of investigations, have suggested an order of importance between these three elements, giving less importance to the role played by accent in the judgments of intelligibility and comprehensibility (Munro and Derwing, 1999; Derwing, et al., 1998).

Studies carried out by Derwing, et al., (1998), Munro and Derwing (1999), and Derwing and Rossiter (2003) have focused on attaining intelligibility through explicit pronunciation instruction. Two of these studies (Derwing, et al., 1998; Derwing and Rossiter, 2003) comprised the same population and participants went through the same process of pronunciation training. However,

each one of these studies has approached intelligibility, comprehensibility, and accentedness differently, as it is described below.

In terms of pronunciation instruction and its effects in improving intelligibility and comprehensibility, Derwing, Munro and Wiebe (1998) undertook a study comparing the implementation of two perspectives on pronunciation teaching over a period of 12 weeks. The objective of their study was to show how the focus of pronunciation instruction accounts for the improvement of comprehensibility and accentedness. Although an improvement was found in terms of accentedness and comprehensibility, the type of instruction each group received accounted for either improvement on accentedness (segmental approach) or comprehensibility (global approach). Since these two previous studies are the ones that the present research will follow, its methodology will be explained in-depth in Chapter 3 in order to compare the setups of the original and the adapted studies. Their study also provides evidence that supports the second premise of the current study: having a strong foreign accent does not affect the speaker's intelligibility.

After showing that comprehensibility and accentedness could be improved after explicit pronunciation training and in order to understand the relationship between these three variables, Munro and Derwing (1999) carried out another study. They worked with 10 native speakers of mandarin studying ESL and 18 Native English Listeners (NELs) who transcribed the speakers' utterances and evaluated them in terms of intelligibility, comprehensibility and foreign accent. They found that the speakers received high intelligibility and comprehensibility scores although the perception of foreign accent varied significantly, with prevalence in the 'heavily accented' range. The results of this

study demonstrate that having a strong accent does not compromise intelligibility. Furthermore, we can observe that there was a negative correlation between the three variables where having a strong accent does not translate to poor intelligibility.

Similar to Derwing, et al., (1998)'s study, Derwing and Rossiter's (2003) worked with 48 No native English Speakers (NNESs) and after explicit pronunciation instruction (segmental, suprasegmental or global, to be explained/defined below) the researchers came to conclude that the improvement observed in each group was due to pronunciation instruction the participants received. Derwing and Rossiter (2003), state that focusing on certain aspects of the phonology of the language affect the development of others. An example of this situation is found in the results obtained by the segmental group, who after focusing on the accurate production of certain phonemes, were rated as having less accent during the recordings carried out after the pronunciation training.

Yet, regardless of the type of instruction that the EFL speaker can get in the language classroom, there is another important factor that can contribute to the improvement of comprehensibility, intelligibility and accentedness such as the setting (ESL / EFL) in which the learner studies, the characteristics of the learner as well as their motivation. The following section presents relevant information that makes reference to the learners` needs and characteristics as well as the place in which the target language is studied. It also emphasizes the age factor in the achievement of pronunciation goals in the class and the acquisition of a foreign language in general.

2.2.2 Motivation and the Attainability of a Native-like Foreign Accent

According to Pennington (1996), "the most important thing when deciding what to teach is looking at our students, their language problems and their future needs in terms of their English language skills" (p. 218). This is important to be considered since we cannot be expected to teach the same syllabus to a group of EFL learners and a group of ESL students. Also, because there are students who want to learn English in order to communicate with other NESs, to be able to read and understand articles, or even to teach English. Because we do not know which purpose a given language learner may have, we need to get acquainted with the learners in terms of their ages, their background and language needs.

This section presents the role that motivation and age play in the acquisition of a foreign language, specifically in the acquisition of a native-like foreign accent. The reason why I have decided to focus only on the attainment of a native-like accent derives from the fact that not so long ago bias were held against 'foreign' accents (Munro and Derwing, 1999) and research was carried out in order to support the fact that native-like accents were possible to acquire, such as the study that will be presented below.

The literature presented in this section shows how the characteristics of the learners account for the attainability of language learners' goals. From biological reasons to external factors, learners' characteristics play the most determinant role in the acquisition of a foreign language.

Despite the fact that learning a foreign language is a 'must' in the overall preparation of professionals for people living in Mexico, the situation mentioned in the introduction of this thesis project, it is also important to take into consideration the characteristics of the learner. One of the main differences between learners in an EFL and ESL context is the fact that most EFL learners are not in the classroom by personal choice, but because they are required to learn a foreign language as a mandatory subject, as opposed to the ESL learners who want to learn the target language as a means of survival in a foreign country. For the abovementioned reasons, when teaching EFL as teachers we need to ask ourselves the following question: 'Who are our learners?' Knowing our learners mean to be acquainted with the students' age, their experience in learning a foreign language, their level of proficiency and their motivations and attitudes toward the learning of it. (Celce-Murcia, et al., 1996).

With respect to age, there is a period of time in which the learner is said to learn easily and have more probability to achieve a native-like pronunciation of the target language called *The Critical Period Hypothesis* (CPH) proposed by Lennenberg (1967, as cited in Flynn and O'Neil, 1988). According to Flynn et al., (1988) the CPH represents the biologically determined period of life during which maximal conditions for language acquisition exist. The theory suggests that after the critical period, which ends around puberty, the learner will face difficulties when acquiring a second language (Celce-Murcia, et al., 1996). Furthermore, Lennenberg believed that the language acquisition device prevents an adult learner for acquiring an accent-free second language (Flynn et al., 1988).

The CPH in its strong version suggests that "persons beyond the age of puberty do not acquire an authentic (native-speaker) pronunciation of the second language due to aspects such as: neuromuscular plasticity, cerebral development, psychobiological programs, and the environment of socio-cultural influences" (Brown, 2007, pp. 62-63). However, Lamendella (1977, as cited in Bebee, 1988) and Selinger (1978, as cited in Bebee, 1988), argue for a sensitive period which leaves open the possibility of learning certain language skills at different periods of time in human development. This means that the brain does not shut off completely or at all around puberty, instead some language skills can be acquired at certain ages; not doing so would only make it difficult to acquire later but not impossible. The latter accounts for the weak version of the CPH, also supported by Scovel (1988).

The strongest version of the CPH would lead us to believe that it is virtually impossible to acquire a native-like pronunciation of any given language after the age of 13. However, the CPH only gives us a principle regarding the acquisition of a second language in terms of pronunciation that cannot be taken as a rule as will be shown later in this Chapter. As I mentioned before, knowing our students' age could help us to prepare suitable material for the acquisition of the target language regardless of whether the learner wants to sound native-like or keep his/her foreign accent, after all it is the learner's choice.

As mentioned before, some findings do not support the CPH. Although the study discussed below qualifies as the exception to the rule, we should consider the characteristics of the participants and the role that motivation played within the acquisition of a L2. Bongaerts, Summeren, Planken, and Schils (1997), present a study where samples of 5 native speakers of British

English (control group) and two groups of learners were collected (experimental group). These two groups of learners were comprised of 10 Dutch learners of English identified as highly successful learners by EFL experts, and 12 learners of English at various levels of proficiency. None of the participants from the experimental group had received instruction of English before the age of 12. Language samples were rated on their accent by 13 native speakers of English; the results showed that "some of the NS of Dutch received ratings that were comparable to the ratings assigned to the native speaker controls" (p. 462), apparently the judges seemed to be unable to identify the native English speakers from the highly successful learners of English. In spite of the late exposure to the target language, it seems that the Dutch learners from Bongaerts et al. (19997)' study could attain a native like pronunciation of their L2. However, regarding this study it is important to keep in mind that these were highly successful learners, who were also highly motivated.

Therefore, motivation is an important factor in the attaining of a native like accent as Bongaerts et al. (1997) point it out when they refer to Klein's (1995, as cited in Bongaerts et al., 1997) argument. According to Klein (1995, as cited in Bongaerts et al., 1997), if learners have a massive L2 input and if it is important for them to sound like a native speaker, there is a possibility that they will attain a native-like accent, despite the fact that they started to learn the language late. This was the case of the Dutch learners, who reported that, in view of their profession (professors of English), it was important for them to speak English without a noticeable trace of Dutch accent (Bongaerts et al. 1997).

Although the results of this study support the argument that it is possible to acquire native-like pronunciation after certain period of time, they are not significant enough to represent the counterpart evidence to the CPH. As, Bongaerts et al. (1997)'s study seems to represent a utopian scenario, where nativeness in pronunciation is aimed for regardless of the late start, which takes us back to the beginning of this section; we have to know our students, their motivations, and needs.

Apart from the age of the learner, the learners' attitudes and motivation towards the learning of the foreign language are vital. In the words of Pennington (1996), "the learner's attention and motivation are key to activating change, facilitating the change process and maintaining process in phonological acquisition" (p. 219). If we take again into consideration the participants in Bongaert et al.'s (1997) study we can see that those learners were successful with an excellent command on the target language and who were also lecturers who taught English at a Dutch university, the reason why not having a foreign accent was important, hence, the reason which led them to acquire a native like accent. Besides the neurological constraints that these learners may have experienced, the role of attitudes toward the target language are very important. According to Firth (1992), among the most significant factors affecting attitude are education, occupation, length of time in host country and feelings about the target culture. The role that motivation plays in the improvement of intelligibility and foreign accent could be a key factor in the results obtained in the current study.

In addition, with the increased number of NNESs around the world and concurrent increase in NNES-NNES interaction as opposed to NES-NES

interaction it may be that learners would want to acquire a native-like foreign accent.   As Jenkins (2000) points out "there is no need for learners to eradicate the phonological features that mark them as coming from a particular L1 group" (p. 207).

Throughout this section the focus was on the learners and their characteristics of age, attitudes and motivation towards the target language and how this can account for differing achievement in native-like pronunciation. It can be noticed that the learner's attitudes, motivation, and age in which they are first exposed to the foreign language can account for the success or failure of the learning of it. However, it is not all the students' responsibility because the methodology of language teaching also plays an important role. In the following section, it will be described the most relevant research that has been carried out in the area of pronunciation, specifically that on pronunciation instruction.

2.3   Teaching: The Role of Pronunciation Instruction

Language teaching has experienced dramatic changes as a result of the practical realities of the classroom and the society of the time. It holds true that now bilingualism and multilingualism are the norm rather than the exception (Richards and Rodgers, 2006). Furthermore, of all the languages spoken in the world there is one which has stood out due to its economical, political and cultural importance: English.

During late 1999 the world population passed the 6 billion mark. Of these, 1,500 million speakers speak English with approximately 750 million having English as either their L1 and L2 while an equivalent number of

speakers using English as their foreign language (Crystal, 2007). Remarkably, the population of speakers of English as a foreign language is the same as the amount of L1 and L2 speakers' altogether. According to this information, Crystal (2007) suggests that one quarter of the world population were capable of communicating with a useful level of English in 1999. This data help us underscore the importance that English has been acquiring as a global and main language, hence, the interest of methodologies and theories to teach it.

The methods that have existed through the last decades symbolize the stages that language teaching has experienced. Nowadays, the most accepted approach is the Communicative Approach. Language schools offer courses that promise the students will be able to communicate at the end of it. Students enter these classes with the hope of being taught in an effective way, in which the outcome is communicating effectively, where the eclecticism is the common label used for the language teaching method. However, from my experience as a language teacher and learner, most of the times students find themselves in a situation were the emphasis of language learning is placed on grammar structures, and if any, on writing skills.

Whether English is taught as a foreign or second language, there are 4 skills that must be taken into consideration when teaching a language. Those four major skills are: listening, speaking, writing and reading (Harmer, 1986). The four skills can be categorized according to what they require on the learner's part; to produce or to receive the language. Among the receptive skills listening and reading can be found, and writing and speaking are considered to be productive skills. These skills cannot be taught in isolation, because the language as a whole and as a communicative act requires the learner to make

use of the four integrative skills (Harmer, 1986). This also means that any teacher of English should combine the teaching of the four skills, and as a consequence the learners should view the target language as a whole, not as only grammar, or only reading. For this reason, the objective of the present section is to show how the communicative competence becomes the goal of instruction and how it fits in the teaching of English as part of the communicative approach.

2.3.1 Communicative Competence

Learning a foreign language does not only mean studying and understanding the use of grammatical rules (grammatical competence), or memorizing vocabulary, it also includes the development of the ability to know how to use the language effectively. For this reason it is important to refer to the communicative competence.

Canale and Swain (1980) are very explicit in defining the components of communicative competence. They state that in order to be communicatively competent, the speaker has to a) know the grammatical rules of the target language and, b) know how, when and with who use the language. The first one refers to the *grammatical competence* and the latter makes reference to the *sociolinguistic competence*.

According to Kasper and Rose (2001), communicative competence includes at least two components: a code component and a use component. According to Kasper and Rose, the *code component* refers to speakers' knowledge of syntax, morphology, semantics, lexicon and phonology, which

makes reference to the grammatical competence proposed by Canale and Swain (1980). On the other hand, the *use component* describes the ability that the second language (L2) learner has to use the target language appropriately according to a specific context, named sociolinguistic. In addition, Hall (2005) defines communicative competence as the ability that the speaker has to use language in an appropriate (sociolinguistic competence) and effective way (grammatical competence) in the communicative act. Although Hall does not make a marked distinction between the knowledge of grammar and the knowledge of the rules of language use proposed by Canale and Swain (1980), these can be clearly identified.

Furthermore, Canale and Swain (1980) distinguish another important factor within the communicative approach: communicative performance, which is the realization of the grammatical and the sociolinguistic competencies. Following the communicative approach, it should be the goal of instruction to have students being able to communicate effectively by recognizing grammatical structures and knowing when and how to use them.

In order to demonstrate the relationship existing between the communicative competence and pronunciation teaching and its relationship with the attainability of intelligibility and comprehensibility, the following section focuses on the description of teaching methods and the role of pronunciation instruction has played within them.

2.3.2 Development of the Communicative Competence through Pronunciation Instruction

From the grammar translation method, to the communicative approach, the instruction of foreign languages has become a reflection of society's needs. For example, the Grammar-Translation method had as its goal of foreign language study to read its literature and to obtain mental discipline or intellectual development as the result from foreign language study (Richards and Rodgers, 2006). A more illustrative method of how methods have become a reflection of society's needs is the Audiolingual method or the Army Method, which resulted from the US government's need to have military personnel able to interpret, translate and communicate in languages such as German, French, Italian, and others. According to Richards and Rodgers, the aim of this program was for students to achieve conversational proficiency in a variety of foreign languages.

As a consequence, some methods have conferred more importance to certain aspects of the language than to others. In the nineteenth century, the grammar translation method placed great importance to the accurate translation of texts and sentences to the target language (Richards and Rodgers, 2006). This method emphasized the development of the grammatical competence where precise translations and the memorizing of grammatical rules of the target language were demanded. As a consequence, pronunciation was not considered as important in the acquisition of a second language.

According to Morley (1991) the history of teaching pronunciation dates back to the 1940's with the development of the audiolingual method in the United States and the Oral approach in Britain, where pronunciation was

considered one of the top priorities. The oral approach was carried out by emphasizing imitation, memorization of patterns through drills and dialogues, and with special attention to correction. According to Richards and Rodgers (2006), the latter focused on the accurate production of the target language in its speaking form.

One of the main criticisms to the Oral approach is its foundation on behaviorism (Richards and Rodgers, 2006). According to Richards and Rodgers, behaviorism acknowledges the human being as an organism that is capable of performing different kinds of behaviors. These behaviors can become habits in the presence of three elements: a stimulus, a response and reinforcement. One of the central methodological practices of Audiolingualism makes reference to the accurate production of speech. This is supposed to be achieved by the learner by memorizing dialogues and pattern drills from the learner (Richards and Rodgers, 2006), leaving no room for real and effective communication.

During the early 1960's the instruction of pronunciation diminished from teaching practice. Methods and approaches to the teaching of languages tended to focus on grammar, or skills like reading as, for example, in the reading-based approach (Celce-Murcia, et al., 1996).

Later, with the purpose of enabling the learner's use of the target language in a functional way, the *Communicative approach* emerged as the evolution of teaching methods. This approach views language as communication, where meaning is paramount instead of grammar structures and accurate pronunciation. Different to Audiolingualism, the Communicative

approach strives for a comprehensible pronunciation rather than a native-like pronunciation (Richards and Rodgers, 2006). Therefore, through the Communicative approach aims to have speakers who are able to communicate and who are intelligible.

During the 1970's and with the increasing popularity of the Communicative approach there were some indications of change. According to Morley (1991) the foci of this change were basic philosophical considerations for teaching pronunciation such as learner involvement and self-monitoring. There were also pronunciation considerations such as intelligibility issues, attention to word and sentence stress, rhythm, intonation, vowel reduction, sound spelling, among others.

After this increased attention to pronunciation, in the mid-1980's continuing into the 1990's, the ESL curriculum gained more importance among researchers; hence, more research was carried out. Among research carried out, there was a special attention to adult and young adult learners (Morley, 1991).

The language approaches mentioned above show us how pronunciation has moved up in the hierarchy of importance in language teaching, especially for the development of the communicative competence. As one can see, the emphasis placed on pronunciation has depended on the language teaching method most widely used during a particular time in history. Celce-Murcia, et al. (1996) summarizes the methodological differences of teaching methods and the role that pronunciation has played in each one in Table 1.

Method	Focus	Method used
Grammar-Translation	N/A	Teacher correction via lecture/explanation
Direct Method	Accuracy	Teacher correction and repetition
Audiolingual	Accuracy	Teacher correction
		Repetition drill and practice in the language lab
		Minimal pair drill
Silent Way	Accuracy first, then fluency	Teacher correction cues by sound/color charts and Field charts; use of gestures and facial expression
Community Language Learning	Fluency, then accuracy	Teacher correction via repetition
TPR and Natural Approach	N/A	Native-speaker input
Communicative Approach	Fluency obligatory; accuracy optional	Learner engagement in authentic listening and speaking tasks
Suggestopedia	Fluency	Peripheral learning; dialogue dramatization

Table 1 – Teaching Pronunciation: Methodological Variation (Celce-Murcia, et al., 1996, pp. 236-27)

The table presented above, shows the different teaching methods of foreign languages. It includes the focus on pronunciation given by each method, as well as the types of activities carried out within the classroom. As can be seen, the focus on pronunciation has shifted greatly, from giving more importance to

accuracy to centering the attention to fluency, from a teacher-centered setting to student-centered activities, from controlled classroom activities to freer tasks.

According to Morley (1991), with the commitment to empowering students to become effective communicators, the instruction of pronunciation should be addressed with a new look and a basic premise: "intelligible pronunciation is an essential component of the communicative competence" (p. 488). Something to which Celce-Murcia, et al. (1996) add "the next issue is methodological: How can teachers improve the pronunciation of unintelligible speakers of English so that they become intelligible?" (p. 8).

The following section will describe two main pronunciation instruction approaches, one based on the teaching of phonemes of the target language (segmental approach) and a second one focusing on features such as lexical stress, sentence stress, intonation and rhythm (suprasegmental approach). As evidence will be presented, we will find out how each of these approaches can help to the improvement of intelligibility, comprehensibility and accentedness in different ways.

2.4   Approaches to Pronunciation Instruction: Segmental vs. Suprasegmental

In the previous section (2.3.2) it was stated that the main goal of pronunciation instruction should be intelligibility and not native-like pronunciation. Intelligibility is the only requirement for the L2 speaker to be able to communicate. Celce-Mucia et al. (1996) ask themselves the same question I have asked myself in order to attain intelligibility, what methodology would be more helpful / effective

for students to aim this goal? How can intelligibility be reached? As could be seen in the previous section, approaches to the teaching of pronunciation have changed significantly throughout the recent history of language teaching, moving from an emphasis on the accurate production of individual speech sounds, such as vowels and consonant sounds, to concentrating more on the suprasegmental features and the communicative aspects of speech (Richards and Renandya, 2002).

However, the recent shift in the use of English, where the number of NNESs has overcome the number of NESs (Crystal, 2007), implies the change of focus of pronunciation instruction (Jenkins, 2002). It is not only about deciding whether to teach segmental or suprasegmental features, but about identifying which phonemes within the segmental approach and which features regarding the suprasegmental approach will help in the attaining of intelligibility.

In Field's (2005) words, it is not easy to determine which features of pronunciation should be prioritized in order to achieve intelligibility. Opinion on this subject has been divided giving importance to the contributions made by segmental features (phonemes) and suprasegmental ones (word stress, rhythm, and intonation, often referred to as *prosody*). In this section the most significant studies carried out to support each one of these approaches will be presented, as they will comprise the syllabus of the explicit pronunciation instruction to be delivered to the experimental group.

2.4.1 The Segmental Approach

According to Jenkins (1998), the *segmental features* are considered the 'core' sounds of English and those that distinguish it from other languages, as well as the tonic stress in terms of suprasegmental features. The segmental aspect of language makes reference to the inventory of vowels and consonants (Celce-Murcia et al., 1996). Among these special sounds of English there is the consonant 'th', which does not occur in the majority of other languages and which most non-native speakers have difficulty in pronouncing. The segmental aspects also include the inventory of 14 vowels. For researchers such as Deterding (2005), and Riney, Takada, and Ota (2000), the accurate production of these phonemes affects the speakers' intelligibility as it will be presented in the research they carried out.

In order to determine the important role that some phonemes play in the intelligibility of a language, Deterding (2005) worked with speakers of Estuary English[1] (EE), a style of pronunciation somewhere between the prestigious RP (Received Pronunciation) and Cockney, which is the accent associated with the working-class speakers in London (Deterding, 2005). Deterding (2005) carried out his study in a University in Singapore, where he recorded three young British men individually in a five-minute conversation with him. Then, these conversations were listened to and transcribed by 12 undergraduate Singaporean students. Deterding (2005) found that there are some features of pronunciation that contribute to the non-understanding of EE speakers. He focused on the 'theta' sound and its replacement with /f/ and /v/, t-glotalling, the

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[1] Estuary English is the variety of English becoming popular in much of Southern England.

fronting of close back vowels, and the vocalization of dark /l/ which are ones of the prominent features of EE. Deterding (2005) suggests that the EE speakers created intelligibility problems for Singaporean listeners. For example, the Singaporean listeners signaled difficulties in transcribing what they were listening to; for example, the 'th' fronting replaced by the /f/ was one of the most problematic features, such as the expression 'three nights' which was transcribed as 'free nights'. Another example of th-fronting happened with the transcription of 'thought' as 'fought' (p. 433).

As this study shows, the substitution of certain phonemes can produce misunderstandings. Despite the fact that this is not the case of isolated sentences being transcribed, it seems that it was not very helpful that the expressions transcribed inaccurately were in context. Therefore, the replacement of one sound over another might cause conflicts in the understanding of a message, something that would be serious enough to affect overall intelligibility. What this study intends to stress is the fact that English learners should be exposed to non-native English accents, since students are likely to encounter interlocutors whose speech has these characteristics. In terms of pronunciation teaching, these findings suggest that overall intelligibility can be affected by the mispronunciation of certain phonemes. Therefore, special attention should be given to segmental features in the syllabus designed for the experimental group, including the voiced and voiceless sound of theta.

Similarly, Riney, Takada, and Ota (2000) present a study focused on global foreign accent and the transfer flap /r/ instead of /l/ and /r/ in the speech of Japanese native speakers in an EFL context. This study focuses more on the

fact that mispronunciation of some sounds can affect perceived global foreign accent; the more the flap substitution is present, the more the foreign accent is perceived by the listeners (Riney et al., 2000). This correlation shows that the transferred segmental, the Japanese flap, may be a contributor to the global foreign accent of Japanese EFL speakers.

It is clear that focusing on segmental features does not emphasize the idea of understanding each word from the interlocutor, as long as the message is understood (Deterding, 2005). Deterding points out how in one of the conversations carried out with one of the participants, the interviewer understood *Oman* as "Amman," (the participant's name) and how that did not cause a breakdown in the process of communication. This does not mean that if the segmental component is left outside the pronunciation instruction, the speaker will still be able to communicate. It could be the case that the mispronunciation of a key word within the message can create serious breakdown in communication. In this regard, Jenkins (2002) proposes a *Lingua Franca Core* which suggests those segmental (and suprasegmental) features which according to her studies are worth focusing on in order to attain intelligibility among NNESs (e.g. learners of English with the same or different L1s). For example, according to Jenkins and her Lingua Franca Core, the voiceless sound of 'th' (e.g. the word 'three') which is not included in most of the phonological inventories of other languages and its substitution for the voiced sound of 'th' is acceptable (in most cases) since it does not cause intelligibility problems among NNESs. On the other hand, she argues that if there should be a focus on vowels sounds, they should be drawn to the contrast between long and short vowels ('l<u>i</u>ve' and 'l<u>ea</u>ve) and not in vowel quality (/bʌs/

and /bus/). Accordingly, Jenkins proposes an inventory of consonant and vowel sounds that are required for intelligibility.

Due to the importance given to segmental features, it is important to include a section in the literature review which deals with the teaching of segmental features. The following section will introduce the main stages of teaching segmental features based on Celce-Murcia, et al., (1996), an example will also be provided.

2.4.1.1   Teaching Segmental Features

For the purpose of teaching segmentals, Avery and Ehrlich (1992) grouped the most common pronunciation problems of different L1 speakers (e.g. Spanish, Italian, Japanese speakers) and created a document that contains the problems that certain language groups may present while learning English. Knowing the speakers' problems is beneficial for the teaching of pronunciation in the sense that it can help the teacher to predict problems that the learner can present and come up with solutions beforehand, prioritizing the learners' needs. However, it is important to keep in mind that each learner is different and in order to determine the group of segments that will be addressed a diagnostic test should be given before the instruction begins.

Celce-Murcia et al. (1996) propose a communicative framework to teach pronunciation based on the segmental approach. Its communicative framework includes activities that identify four main blocks: description, listening discrimination, guided and controlled practice and communicative practice and feedback.
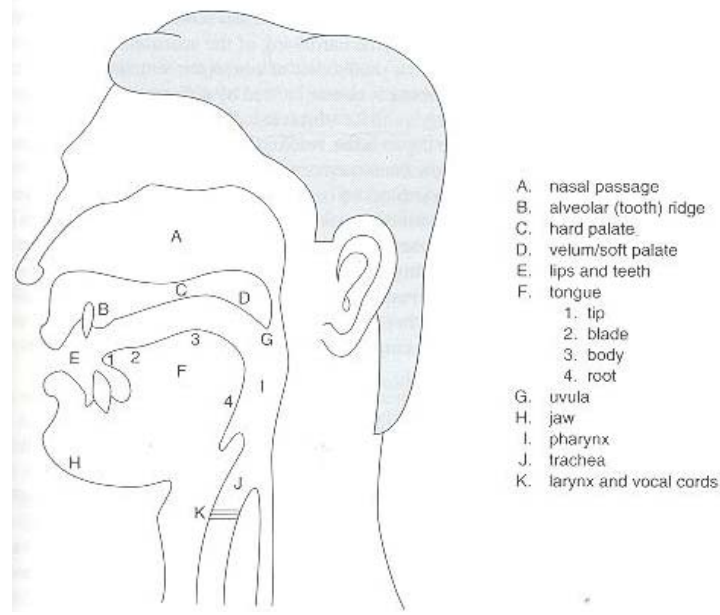
Figure 1. Sagital Section Diagram (Celce-Murcia et al., 1996, p. 43)

During the description, the teacher has to present the sounds to be taught during the lesson. This includes presenting Sagital section diagrams like the one that represents Figure 1 that show the place of articulation (where the sound is made) of certain sounds, and the manner of articulation (how the airflow is affected) (Celce-Mucia, et al., 1996).
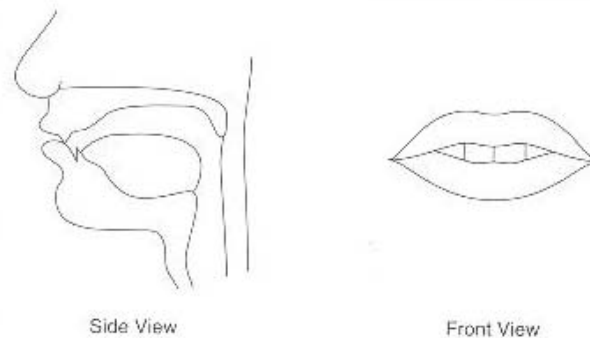
Figure 2 – Articulation of /v/ (Celce-Murcia et al., 1996, p. 51)

In order to give a clearer example, Figure 2 serves as a means to give the articulatory description when teaching /v/. The side view demonstrates how the upper teeth rest inside the lower lip when producing the /v/ sound. The front view gives is a better picture of how the aforementioned description should be viewed while producing the target sound. This is very helpful, especially when explaining the production of sounds that do not exist in the inventory of sounds of the mother tongue.

The listening discrimination section consists of giving the learner enough input to identify which target sound is being produced. Most of the times, the discrimination section will be presented with minimal pair drills – drills that use words that differ by a single sound in the same position (Celce-Murcia et al., 1996). An example of a listening discrimination exercise requires the learner to decide if two words spoken by the teacher or an audio tape are the same or different. Table 2 (below) presents an example of minimal pair drill use for listening practice and guided oral production. Minimal pair drills are especially helpful to develop listening skills in the students. Although Table 2 shows the example of a minimal pair focused on the production of vowels, this can be also used for the production of consonants.

Word Drills	
A	B
/iy/	/i/
sheep	Ship
green	Grin
least	List
meet	Mitt
deed	Did

Table 2 – Minimal Pair Drill for Listening Discrimination (Celce-Murcia, et al. 1996, pp. 4)

The guided and controlled practice provides the learner with the opportunity to produce the target sound. Through isolated words, simple sentences, conversations, and role play, students have the opportunity to practice in a controlled way.

Finally, once the students have had the chance for controlled and guided practice, they are ready to engage in communicative practice using the target sound (Celce-Murcia, et al., 1996). An example of this stage of pronunciation instruction could be the practicing of voiced and voiceless "th", an example of how the teaching of this phoneme could be carried out is presented in Appendix A.

This section showed one way to teach segmental features, as part of pronunciation instruction. Although it is not the only way of teaching segmental features, it is the one I will use though to teach this feature to the experimental group since it is the one I have worked with before with significant results. This approach is especially helpful to teach those phonemes that are absent in a speakers' L1. However, one of the disadvantages of this approach could be translated in the amount of time devoted to mastering these phonemes and the lack of attention to others aspects of the language that according to Derwing and Rossiter (2003) can affect more importantly the speaker's intelligibility.

Consequently, in order to counteract time constraints regarding the teaching of English phonemes, I will focus on segmental features according to the language function we go over in class. For example, if we go over the function of talking about the past I will teach the segmental '–ed' observed in the past tense of regular verbs, without having to separate the function of the language with its pronunciation.

Focusing on one aspect of speech could affect the other. Derwing and Rossiter's (2003) study found how the group of learners receiving segmental instruction made less phonological errors during the post-test after receiving a segmental instruction than the group who was instructed following the suprasegmental approach. Influenced by the specific type of instruction the segmental group received, they seemed to be more concerned about not making errors related to the production of some segmental features than to the fluency of their speech.

However, languages have their own set of unique features that go beyond the segmental level: the suprasegmental features. This includes connected speech, rhythm, linking, intonation, and prominence and will be presented in the following section.

2.4.2 The Suprasegmental Approach

One aspect that plays an important role in the preference of focusing on suprasegmental over the segmental features is the communicative approach in language teaching. This approach seeks to develop the speaker's communicative competence while focusing on fluency and accuracy, emphasizing the former. Although, both features benefit the speaker's intelligibility, it has been shown that suprasegmental features help more in the improvement of intelligibility than segmental features (Field, 2005; Trofimovich and Baker, 2006).

Major research concerning the suprasegmental features and their importance in attaining intelligibility (Hahn, 2004 and Pickering, 2001) has been conducted using the ITA population- International Teaching Assistantship, henceforth ITAs . ITAs are a US concept that refers to international students enrolled in a degree program at a university in the US. They are in charge of teaching a variety of classes across the university such as physics, chemistry, math, linguistics, and language courses. ITAs go to these universities from all over the world. Since most of them speak a L1 different to that of the language spoken in the host country, it is common for the majority of them to have problems in communication with their students; especially those who are living

abroad for the first time and started to learn English in college. These language characteristics have been fundamental to the development of studies where the importance of suprasegmental features in language teaching have been raised. In addition, these studies have focused on discourse rather than on individual sentences, as is often the focus in lab work.

In the following section a short definition of each suprasegmental will be presented, followed by current major studies carried out in their support.

2.4.2.1   Sentence Stress and Lexical Stress

The first suprasegmental feature to be described is stress. In English, stress is present at the lexical level (or word level) and at the sentence level. Word stress refers to the pattern of stressed and unstressed syllables within a word (Celce-Murcia et al., 1996). E.g. to-MA-to; in the word 'tomato' the syllable 'MA' has the main stress, in the word CUL-ture, the stress lies on the first syllable.

At the sentence level, "sentence stress refers to the various stressed elements of each sentence" (Celce-Murcia et al., 1996, p.151). Sentence stress is also known as the focus word of a sentence (Grant, 2007). Through sentence stress the speaker can let the hearer know his/her intentions and clarify the hidden meaning of an utterance, for example:

(1) **I** thought she might consider a new handbag (Not someone else**)**

(2) I **thought** she might consider a new handbag **(**I am not sure**)**

(3) I thought **she** might consider a new handbag (Not another person**)**

(NagaRaju, 2008)

As these series of same utterances show, a person can decide which part of the message the listener should pay attention to, it gives a whole different meaning if the stress is put on the word 'I', 'thought', or 'she'. On this note, two studies will be presented in this section referring to each one of these features of speech. Its importance in the inclusion of the pronunciation instruction will be also mentioned.

Field (2005) focused his study on lexical stress with the idea that the various constituents of prosody (lexical stress, intonation, relative duration of strong and weak syllables) contribute to intelligibility in different ways. He emphasized that prosodic features could play a more important role in intelligibility than segmental features. That is, native listeners (NLs) could have more difficulty understanding a speaker's message when misplacement of lexical stress occurred with the addition or deletion or a phoneme. Field also supports the idea where the misplacement or lack of lexical stress can compromise the intelligibility of a speaker.

By focusing on the oral production of speakers, groups of listeners were asked to transcribe a set of isolated words that presented changes in lexical stress (rightward or leftward[2]) and manipulation of vowel quality (Field, 2005). These groups of listeners were formed by Native English Listeners (NELs) and Non-Native English Listeners (NNELs), whose proficiency level was not stated, and in spite of their different L1s, both responded in similar ways to the misallocation of stress. The result from Field's study showed that significant

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[2] rightward is when the lexical stress is misplaced to the right (seCOND, instead of SEcond); leftward is when the stress is misplaced from its original place to the left (CONtain instead of conTAIN).

decrement in intelligibility was perceived when stress was shifted to an unstressed syllable without an accompanying change of quality. This study demonstrated that lexical stress should be considered in the teaching of pronunciation, but not as a priority since intelligibility only decreased by 19.78% for NELs and 21.28% for NNELs. According to Cutler and Carter (1987,as cited in Deterding, 2005), who calculated the polysyllabic items of the type studied by Deterding (2005), 40.59% of these words constitute the words in English conversation. In Deterding (2005) words, there is a possibility that intelligibility loss due to the incorrect placement of lexical stress is quite small, around 8% of uttered words if they were all misstressed.

However, it is important to bear in mind that this study comprised the transcription of isolated words, and this might have been the reason why lower decrease on intelligibility was observed. Could the listener follow a running speech when misallocation of lexical stress occurs? Would global intelligibility be affected by the misinterpretation of content words? This loss of intelligibility due to wrong placement of lexical stress depends on how much the listener has been able to decode so far. Therefore, lexical stress should be considered a priority in the syllabus of any pronunciation instruction.

As the previous study showed, the listener seemed to rely on stress at the word level since "the stressed syllable of a word provides the listener with a code that links directly to the representation of that word in the mind" (Field, 2005, p. 403). This should be considered enough to include the teaching of lexical stress as an important feature to attain intelligibility; it represents the linking to the lexicon. Similarly, Hahn (2004) focused her study on the importance that sentence stress has on intelligibility. She focused on the

principle of *given-new stress connection* (GNSC), which presents the contrast between new and given information expressed by stressed and unstressed elements.

Hahn (2004) also worked with the speech of an ITA and a group of North American undergraduate students, the latter of which evaluated the ITAs' oral production. The ITA had to read three versions of a text and each presented changes in the placement of primary stress or sentence stress; one was correctly located (version A), in the second version the target feature was misplaced (version B), and the last one did not indicate where the sentence stress was situated (Version C).

The listeners, who were Native English Speakers, then were asked to pay attention to the different versions of the paragraph and asked to answer an instrument that measured comprehensibility. The results of this study showed that the listeners responded more positively to the speech of the ITA when the GNSC was not violated, and were also able to recall more information about the text than when they listened to version B and C (Hahn, 2004).

Keeping the GNSC showed how NESs could recall more information than when sentence stress did not do its job (Hahn, 2004). It is possible that in a conversation between a NES and a NNES, if the latter does not break the rules of given and old information within the use of sentence stress, there would not be a breakdown in communication. More important is the fact that NESs could easily follow a NNES speech by getting the message across, since the chances of sounding monotonous will decrease. Therefore, keeping the GNSC could be translated in terms of being intelligible, hence comprehensible.

2.4.2.2 Stress Timing, Peak Alignments, Speech Rate, Pause Frequency and Pause Duration and its Effects

In order to understand the effect that L2 experience has on the production of five suprasegmentals (stress timing, peak alignment characterizing speech melody and speech rate, pause frequency, and pause duration characteristics of speech fluency), Trofimovich and Baker (2006) carried out a study that consisted of 30 adult Korean learners and 10 adult native English speakers. One of the objectives of Trofimovich and Baker's (2006) study was to find a correlation between the production of those five suprasegmentals and foreign accent.

The role that input and time of living in an English speaking country play in the production of the suprasegmental features favor the production of some, but not all, of the suprasegmentals presented in Trofimovich and Baker's (2006) study . These results revealed that the learners' production of stress timing was related to the speaker's amount of L2 experience. The learners' production of speech rate, pause frequency, pause duration seemed to be related to the participants' age at the time of L2 learning. The learners' production of peak alignment appeared to bear no relationship to either learners' amount of L2 experience or their age at the time of L2 learning.

In terms of the relationship between the production of these five suprasegmentals and accent it was found that a strong and complex relationship exists between the participants' accuracy in producing specific

suprasegmentals and the degree to which their speech was perceived as being accented. As can be seen, Trofimovich and Baker focused on the *accurate* production of five suprasegmentals and its relation to perceived foreign accent without aiming to find a correlation between these variables and intelligibility, which will be more important for the current study.

However, these findings provided insights into the nature of L2 suprasegmental learning and the factors influencing it, revealing similarities between L2 segmental and suprasegmental learning, where can be said that both segmental and suprasegmental features learning depend on the amount of L2 experience and input (Trofimovich and Baker, 2006). In this sense experience is defined as the length of residence in the target language country and the contact to L2 NS and frequency of use (Trofimovich and Baker, 2006).

These findings provide useful information for the development of a curriculum of pronunciation training where attention should be also paid to suprasegmental features such as stress timing, peak alignments, speech rate, pause frequency and pause duration, which can be grouped under a broader category such as rhythm.

The studies presented above support the idea of teaching suprasegmentals in order to attain intelligibility and comprehensibility. In the following section, the role played by intonation will be reviewed.

2.4.2.3   Intonation

The use of proper intonation in a conversation or a speech presentation plays an important role in the communicative act. According to Celce-Murcia et al.,

(1996), intonation "performs an important conversation management function" (p. 200). Celce-Murcia et al. (1996), mention that intonation signals to the listener important features of the message that can enhance successful communication, such as the highlighting of a piece of information, establishing rapport, expressing boredom, to respond in a particular fashion, etcetera.

Pickering (2001) following Brazil's (1997, as cited in Pickering, 2001) model of intonation in discourse, states how intonation is crucial for the communicative act. One of the principles of Brazil's model is his idea of *common ground*, which refers to the shared knowledge of the world that the speakers bring into a conversation (Pickering, 2001). In this sense, the use of tone choice summarizes the common ground between speakers, for example: falling tones in English indicate the introduction of new information, rising tones signal the presentation of shared knowledge between the speaker and the hearer, and level tones or neutral tones have no specific function of introducing new or given information and are often associated with a monotonous speech. In order to find out the importance of the use of tone choice, as a suprasegmental feature, and intelligibility I will present Pickering's (2001) study on the use of tone choice as a tool for improving communication.

The purpose of her (2001) study was to show the importance of the intonation feature of tone choice for comprehensibility in NNESs teaching discourse. She worked with ITAs from China and Teaching Assistants (TAs) from the United States. After recording each of the ITAs and TAs in a natural environment (while giving a presentation to their students), it was found that ITAs used more level and falling tones than rising tones. The level tones chosen by the ITAs encouraged their speech to be perceived by students as

uninterested and the teachers as being uninvolved in the lecture. Despite Chinese being a tone language, which means that a change in pitch can cause change in meaning, this feature was not transferred to their production of English. L1 transfer to English was expected, considering that Chinese would have used varied falling and rising tones, and not just neutral tones. In Chinese, tone woks at the word level whereas in English intonation is part of the sentence level.

Examples of appropriate and inappropriate use of tone choice by TAs and ITAs respectively will be shown below. The first example represents the appropriate use of tone choice by a TA. In this example taken from Pickering (2001, p. 239), the TA shows shifts in his speech according to the function of what is being said (see Appendix B for transcription conventions).

1. / / ↘ so you GUYS had PROBlems / / ↘ with the PRElab / /

   ↗ RIGHT / / →AND / / → the FIRST question WAS uh / / ↘ QUEStion ONE was / /↘for the exAMple on pages four and FIVE / / → FIND out TORQUES / / ↘ for an Axis at x equals ZEro/ /

In example 1, the TA starts addressing the students with his opening remarks, later he use a combination of falling and level tones which indicate a shift of his attention from the students to the information he starts to read from a book. The example shows how teachers use different intonation according to what they are trying to project to their students, whether it is rapport, indifference, new or shared knowledge.

The following example represents the use of tone choice that does not correspond to the kind of information given by the speaker. In the following example from Pickering (2001, p. 248), is presented a transcription of an extract from one of the classes given by the ITA. During this class the ITA makes reference to a series of experiments already conducted by students as part of their previous class, but the ITA does not refer to this prior knowledge with the appropriate tone choice.

2.　　/ / ↘ the FIRST STEP / / ↘ you do is FLAME TEST / / ↘ for Sodium/ / ↘ if YOU have SOdium ion / / ↘ you will get BIG yellow Orange/ / ↘but if you HAVEn't // → there will be NO / / ↘ BIG yellow Orange / /

As observed in example 2, the TA uses falling tones throughout his presentation, suggesting the introduction of new information. However, according to the background information provided by Pickering (2001), the TA from example 3 is referring to information which he already shared with the students. In this sense, the most appropriate tone choice would have been rising tones.

Conversely, Pickering (2001) states that TAs employed rising tones not only to establish common ground of knowledge with the audience, but also to promote a sense of mutual involvement and rapport (Pickering, 2004). An example of this is presented below from Pickering's (2001) study (p. 243).

3. / / ↘ R is what's <u>CALLED</u> / / ↘ it's a GROWTH <u>CON</u>stant / / ↗ if

r's   Positive the thing's getting <u>BIG</u>ger / / ↗ you're getting

MORE <u>Money</u>   / / ↗<u>RIGHT</u> / /   / / ↗ you WANT <u>THAT</u> / / ↗

you want your money to GROW in a <u>BANK</u> / /

As this transcription shows, rising intonation is used to establish rapport with the interlocutors. As observed from example 3, the use of the comprehension checks, such as / /↗<u>RIGHT</u> / / is another device used by TAs to establish rapport and involvement with students.

Different to the NESs expectations, the ITAs did not use tone choices appropriately to signal the difference of status of the information presented to the students (new or given). As a consequence, the ITAs discourse affected the way they were perceived by the students, being boring and uninterested the main adjectives used to describe the ITAs attitudes within the classroom.

One of the main contributions of this study is that it shows that the lack of a proper use of tone choice can affect the interaction between the speakers. It seems that intonation helps to build the necessary rapport to hold a successive exchange of information, also that it gives the listener an idea about the speaker's assumptions about the listener's knowledge; it is a pragmatic feature that needs to be addressed in the instruction of pronunciation.

In general, it can be stated that the suprasegmental features, especially those concerning fluency and prosody, might affect the speaker's intelligibility more than the accurate production of some phonemes. Nevertheless, the theoretical discussion in this chapter has shown that both segmentals and

suprasegmentals can work in favor of the development of intelligibility. In order to construct a holistic curriculum on pronunciation instruction, both approaches will be included in the pronunciation training to be delivered to the experimental group.

The next chapter will present the methodology carried out following Derwing et al. (1998)'s study in order to determine if intelligibility and comprehensibility can be improved after explicit pronunciation instruction. It will also explain how the data will be analyzed in order to determine the relationship existing between comprehensibility and foreign accent.

CHAPTER III: METHODOLOGY

3.1   General Overview

The previous chapter focused on relevant literature for the present study. In this chapter the emphasis will be given to the participants, procedures and materials that I used in the adaptation of Derwing, Munro and Wiebe's (1998) study.

The first section of this chapter (3.2) focuses on the methodology carried out by Derwing, et al. (1998). In section 3.3 I will describe the characteristics of the participants of the current study such as speakers, listeners and the instructor. I will also describe the procedure of data collection (3.4) in terms of recordings (3.4.1.1), selection of speech samples (3.4.1.2) and the ratings of such audio stimulus (3.4.1.3). I will also present the materials used for the pronunciation instruction delivered to the students of the experimental group (3.5). Finally the procedure under which the data were analyzed will be briefly explained (3.6).

3.2 Derwing, Munro and Wiebe's (1998) Methodology

In terms of the speakers, Derwing, et al. (1998) collected speech samples of 48 adult students, at an intermediate proficiency level in a full-time ESL program. Their ages ranged from 18 to 44 years with a mean age of 31.7 years. The researchers collected speech samples from the ESL participants near the beginning of their course (time 1) and again 11 weeks later (time 2).

Three instructors were in charge of the pronunciation instruction. The teachers self-selected the approach they preferred to teach: global or

suprasegmental and segmental. The control teacher, the one who did not have to include the pronunciation component in the class had not studied linguistics and did not feel comfortable teaching either had.

Forty-eight Canadian NESs played the role of listeners and they were in charge of rating the speakers' speech in terms of intelligibility, comprehensibility and foreign accent.

The conditions under which the instruction of pronunciation took place will now be presented. Three conditions were settled for each group where one group had to receive a segmental approach, another had to receive a suprasegmental approach and the third one did not receive any kind of pronunciation instruction, which was called the control group. Since the participants were enrolled in a full-time ESL program, they attended ESL classes for 20 hours per week. The only difference between these three groups was the pronunciation component, the segmental and global group received approximately 20 minutes per day of explicit pronunciation instruction.

One of the limitations regarding this issue is the fact that this study was not comprised of randomly selected students, they were intact groups that were taken as they were and given different types of pronunciation instruction (segmental, suprasegmental). In order to lessen this limitation Derwing et al. (1998) carried out a pre-test for the participants of each group to ensure that all three groups were of a similar proficiency level regarding pronunciation before the study began.

The to-be-rated speech samples consisted of two tasks: a recording of simple statements and an extemporaneous narrative description of a standard

picture story. The sentences used for the controlled reading consisted of a single clause, the speakers were given time to read the sentences silently and then they were recorded onto tape. Immediately afterward, the speakers recorded the extemporaneous speech. Additional recordings of four Canadian NESs were also made, which served as the control recordings.

The ratings took place in several group listening sessions held over a period of two weeks. The listeners heard the stimulus, which consisted of single-clause sentences and rated for comprehensibility and accentedness on a 9-point scale. After hearing each stimulus once, there was a pause that gave time to the listener to decide how difficult the utterance was to understand rating from '1' (very easy to understand) to '9' (impossible to understand). In the second part of the same study and during a different listening session, the same listeners evaluated how accented an utterance from the extemporaneous speech was by rating it from '1' (no accent) to '9' (very strong accent).

For the extemporaneous speech, the listeners assigned comprehensibility and accent ratings in the same manner as in the section above.

Derwing et al. (1998) found that comprehensibility, and accentedness could be improved depending on the type of pronunciation instruction (segmental or suprasegmental) given to the learner. Despite the fact that each group of learners showed improvement in comprehensibility and accentedness, only the suprasegmental group improved in both aspects.

The results showed that although the three groups improved, the segmental group had improved after pronunciation training in the controlled

reading task, whereas the suprasegmental group was significantly better than the other two in the production of extemporaneous speech. This can be due to the fact that all the participants were exposed to a great amount of input just by being in an English speaking country, which makes us wonder whether the improvement shown by participants was due to the specific pronunciation instruction received, or if this improvement was the result of the amount of linguistic input to which they were exposed. One of the reasons I decided to replicate this study was to observe how the amount of input would affect in the improvement of intelligibility and comprehensibility in a situation where students have a limited exposure to the target language.

The following section presents the setup of the present study, its participants, data collection, and data analysis.

3.3 Participants

In this section, the most relevant characteristics concerning the speakers, the listeners and the instructor in charge of the pronunciation instruction will be presented.

3.3.1 Speakers

34 Native Spanish Speakers (NSSs) participated in this study. They were students at a private university in Central Mexico enrolled in an EFL program. As part of their plan of studies, students have to take three mandatory English courses such as English ID101, English ID102 (both high-intermediate level) and ID201 (advanced level). Two groups participated in this study from the course ID102, which is an upper-intermediate level class, comprising a sample

of 34 students. Since these groups were already formed, I randomly chose one to be the group who was about to receive the pronunciation instruction (experimental group) and another one who would not (control group).

	Control Group	Experimental Group
Students participating in the study	18 students	16 students
Gender	7 male	8 male
	11 female	8 female
Range of Ages	17 to 23 years-old	18 to 29 years old
Mean age and mode	$x = 20.2$	$x = 21$
	Mo= 19	Mo =19

Table 3 – Characteristics of the Speakers

Table 3 describes the characteristics of each group; it presents the number of students per group, their ages, mean age and mode. This information was gathered through a questionnaire that was applied at the beginning of the semester (Appendix C)

As this table shows, there was a total of 34 students; 18 in the control group and 16 in the experimental group. Their ages ranged from 17 to 29 years-old, and the mode was 19 years-old.

3.3.2 Listeners

The number of listeners who participated in my study was 8; all of them were Native English Speakers studying Spanish at the same private university as the speakers, during the spring 2009 semester. The students who participated in this research as listener-raters were the ones with the lowest levels of Spanish.

The listeners were contacted through their Spanish professors during the 1st week of classes of the Spring 2009 semester; the project was briefly explained to them and were asked to fill in a questionnaire (Appendix D). The purpose of this questionnaire was to gather information regarding the participants' backgrounds.

The characteristics of the listeners in terms of gender and age are shown in the following table.

Gender	4 male	4 female
Ages	20 to 21 years-old	19 to 22 years-old
	Mean age: 20.75	Mean age: 20.25
	Mode: 20	Mode: 20

Table 4- Characteristics of the Listeners-Raters

The 8 students who participated as listeners-raters were from the United States. Their ages ranged from 19 to 22 years old. The mean age was 20.25 years-old and the mode was 20 years old. According to their responses from the questionnaire, none of them had Spanish heritage, but the majority of them

had taken at least 3 courses of Spanish. Only two of these students said that this was the first time they were studying Spanish. According to the questionnaire, it was also found that they had very little contact with Spanish speakers in their country and this was their first time in a Spanish speaking country.

For the purpose of this study, the ideal listener-raters should be Spanish students who are at the beginner level of proficiency in Spanish. By having little contact with the language, there is a probability they would have had less contact with the language features of Spanish and therefore, be less acquainted with Spanish accents –especially with Spanish accents in English. This means they should have taken no more than two courses of Spanish (information elicited through the questionnaire). It was difficult to find such a population, especially when there were no students registered in the classes belonging to the beginners' levels.

In terms of speakers and listener-raters, it has to be acknowledged that one of the limitations of this study was to put together a sample of students with the ideal characteristics, equal to those participants from Derwing et al. (1998)'s study. People who have participated in this project are the ones who were available (speakers and their classes' schedules) and who wanted to be part of it (listener-raters). This is potentially limiting my study since the small number of listener-raters (for example) resulted in a smaller amount of data to assess the intelligibility and comprehensibility of the non-native speakers which, in turn, limits the conclusions that can be drawn from this study. However, I could not have in my study US American students who had lived in Mexico for more than

2 months; this would have gone against the characteristics described above necessary to carry out this research.

The next section deals with the characteristics of the experimental and control groups' instructor, who was also the researcher of this study.

3.3.3 Instructor

In the current study, I was the instructor and researcher. I am a Mexican female whose first language is Spanish. I have 4-years experience as a language teacher and I have studied English since I was 6 years old. I have also lived abroad, in the United States for a total time of 9 months. In my interaction with other NESs, I have been acknowledged in several occasions to have a native-like accent. My command of the language fits the profile required to teach a high-intermediate level course.

The availability of groups within the language department and the control that I needed to have in this study were the reasons why I was also in charge of the experimental and control groups. Although this can represent a limitation for my study, I considered it necessary. By being in charge of the two groups I could be confident about the fact that one of these groups was receiving explicit pronunciation training, and the other was not. This concern was raised when the pilot study of the present study took place in which another professor was in charge of the control group and I realized that I could not be 100% sure that no pronunciation instruction took place, perhaps because the professor could have taught it unconsciously.

3.4   Data Collection

The collection of data took place during the fall semester of 2008 for the speech samples uttered from the speakers, and also during the spring semester of 2009 when the ratings were carried out by the listener-raters. Each of the instruments used in the study were first piloted during the summer of 2008 by applying them to random students at the same university in order to validate them.

The questionnaires applied to listeners-raters were piloted with the NESs during the 2008 spring semester at the Language Department within the same university. The same case applies to the questionnaire applied to the Native Spanish speakers.

The material used for the elicitation of speeches from the participants and the Likert scales were adapted from different sources. These procedures and the creation of material will be explained in-depth in the following sections.

3.4.1 Procedures

In order to collect information regarding the speakers of this study, two questionnaires were applied; one for the speakers and a different one for the listeners-raters. The application of the questionnaires to the speakers took place at the beginning of the semester in their classroom. Students were told that they were invited to participate in a study carried out by the language department, which was about the acquisition of a foreign language, as extra-credit. The questionnaires applied to the listener-raters also took place in their classroom. An appointment was made with the Spanish instructor beforehand.

Speech samples from the participants were collected near the beginning of their English course (time 1) and again 12 weeks later (time 2). The participants recorded the reading of a paragraph and an extemporaneous speech elicited from the researcher, in which they had to talk about their family or themselves for at least one minute.

Once the recordings of both groups were completed, NESs evaluated the speech samples in terms of intelligibility, comprehensibility and accentedness.

3.4.1.1   Recordings

In order to collect samples of speech from the participants, two recordings were carried out. The first one was recorded at the beginning of the semester (time 1). The second recording was conducted at the end of the semester, 12 weeks later (time 2). The recordings were carried out in the *Grupo de Investigación en Linguistica Aplicada* (GILA), a place located in the first floor of the Language Department in the university. GILA was chosen due to its location within the department, which is an isolated and quiet space, which purpose is to carry out investigations from the language department. These characteristics provided recordings with minimal interference.

The recording sessions were performed individually and with the help of a tape recording machine and a microphone. They were then transferred to a CD, in order to be edited. Since the tape recording needed to be operated manually, someone had to be physically present when the recordings took place. Therefore, the researcher's assistant carried out the recordings of the experimental and control groups. She was a female colleague from the

language department. The purpose of the study was not mentioned to the speakers. They were only told that this was a language department research project to study the factors intervening in the acquisition of a second language. No questions were asked on behalf of the students after this explanation.

The tasks performed by the speakers were first, the reading of a paragraph (Appendix E, taken from Grant, L. (2007)), and immediately after, a mini monologue they talked about their family or themselves for at least one minute. However, the extemporaneous speech, which consisted of a mini monologue, was the only data taken into consideration for the ratings of intelligibility, comprehensibility and accentedness. The reason why I decided to disregard the data obtained from the controlled reading derives from the fact that I was interested in observing the speakers' intelligibility in running speech and not in a controlled production of the language.

Additionally, according to the research assistant, the students were a little nervous because the paragraph reading was their first task to complete. This behavior was noticeable in the participants' sitting positions, the way they played with the paper containing the paragraph and how their perceivable hands were shaking. The fact has been considered that, during the second task, the students would have been less nervous and this would not have affected their performance.

In preparation for the recording, the student first had to read the paragraph silently, along with some prompts (Appendix F) in the form of questions. The speaker could use the prompts in order to talk about his/her family or him/herself for the one-minute mini monologue, the second task. If the

student did not have any questions about unfamiliar words, the student was then asked to go inside the recording room to read the paragraph aloud onto the voice recorder. Later, s/he talked about his/her family, which was the extemporaneous speech section. This was a monologue of approximately one minute. The person recording (a colleague) usually did not speak during any of the tasks. However, if the participant could not talk about his/her family or him/herself for one complete minute, the researcher assistant was then able to ask the participant one or two questions to finish the task.

Additional recordings were made of 3 US English speakers and 1 Australian English speaker (2 male, 2 female). They served as a guideline for the individual listeners' use of rating scales in the listening tasks. It was expected that all raters would consistently assign very good scores to NESs. Failure to do so might indicate a misunderstanding of the instructions.

Once the recordings from the pre-test and post-test were completed, the recordings were then recorded onto computer. This process occurred in the Audio booth, located in the university's Humanities building, where they were also edited. The editing procedure involved choosing the audio samples to be presented to the listeners, which will be explained in-depth in the following section.

3.4.1.2. Selection of Speech samples

The selection of the speech samples to be presented to the listener-raters was a laborious and meticulous procedure. First, the recordings from each student were recorded on the computer. In order to facilitate the identification of each

file, they were given the students' real names, for example 'Veronica1' for the reading of the paragraph and 'Veronica2' for the extemporaneous speech, and so on. All files, which ended in '1,' were not used because they were the paragraph readings. The files ending in '2' were edited, as it is described below.

Speech samples from the mini-monologue had a mean duration of 75 seconds. Each file was divided into three equal parts, according to their length. In other words, if the file lasted 60 seconds, each part had a length of 20 seconds. The second section of each file was the one which was taken into account in order to select the final stimulus. One of the main reasons behind this decision was the fact that during the first 15 to 20 seconds the students had used all the prompts given to them in order to complete the minute. For example, it was noticed that if they had to speak about their family, the majority of them were talking about their siblings during the 10th to 15th second. As a consequence, during the second part of the speech, they were forced to talk about other things that were not part of the prompt questions. Therefore, the topics and situations they were talking about were a bit different. Having different issues being discussed by the speakers made the process of selecting the data stimuli a little easier, since not all of them were saying that they had x number of brothers and sisters along the time that was taken into consideration to select the final audio stimuli. This procedure was carried out for each speech sample, for the pre-test and the post-test.

After having determined the part of the speech sample that was to be heard in order to get the final stimulus, shorter excerpts were selected that were of sufficient utterance length duration, which will be explained next. These

selections were to be transcribed by listeners after a single listening. In order to fulfill this requirement, Munro and Derwing's (1999) selection of stimulus example was followed. They mention in their study that they selected utterances from 4 to 17 words with a mean length of 10.7 words (Munro and Derwing, 1999). In the end, the final stimulus for this study was a selection of 73 utterances, with a mean length of 8 words and a range from 4 to 11 words. There were 68 speech samples from both groups, including the pre and post-test and 5 speech samples from the NESs. Table 5 describes the number of audio files per group and per time.

Once the final stimulus was selected and the listener-raters were contacted, the rating sessions took place. The way in which they were carried out is described in the following section.

Group	Pre-test	Post-test	Total
Experimental	16	16	32
Control	18	18	36
NESs		5	5
Total number of Speech Samples			73

Table 5 - Total Number of speech Samples.

3.4.1.3 Ratings

Two group listening sessions were completed in order to rate the speech samples produced by the participants. They took place in a room at the *Centro de Aprendizaje de Lenguas*, aka CAL. It is located next to the language department building, and it has many computers along with other materials for language learners. The room in which the sessions took place was equipped with individual computers, headphones, an overhead projector and a screen.

The first session consisted of a short training session and the completion of the intelligibility and comprehensibility tasks. The training session consisted of a presentation on behalf of the researcher that included the defining of intelligibility and comprehensibility. For the intelligibility task, it included a couple of examples in which the task the listener-raters were about to complete was practiced. Listeners had to transcribe in standard orthography exactly what they heard from the extemporaneous speech and had to write each utterance word for word. They were presented with stimuli collected during the spring semester.

For the comprehensibility task, the raters had to define how comprehensible the speakers were by using a 4-scale rating system. Listeners were given a table which described the levels of comprehensibility they could give to each speech sample. The scale was adapted from several sources, such as: the Massachusetts speaking assessment criteria (Chicago Board of Education, 2000), the International English Language Testing System speaking band descriptor (IELTS), the Complete speaking test rubric (New York State

English as a Second Language Achievement Test, 2005), and the Explanation of level 2 Speaking rubric (Fairfax County Public Schools, 2000.

The scale used for this study consisted of 4 bands in order to rate the participants' speech: 1-easy to understand, 2-a bit difficult to understand, 3-very difficult to understand, and 4-impossible to understand (Appendix G). There were descriptors and benchmarks for each level. Since the audio files were located in each computer, NESs were able to listen to each benchmark through their headphones as many times as they needed in order to identify why the file sample was chosen to exemplify a certain descriptor. During the presentation, some of them had questions which were addressed, after that they started with the tasks. First they had to orthographically transcribe what they heard and immediately after rate the degree of comprehensibility of each file (Appendix H). They first completed 34 speech samples, had a break of 10 minutes and continued with the second half of the audio files.

On a second day, held 2 days later, the listener-raters were asked to rate the degree of foreign (non English) accent with a 4-point Likert scale (See Appendix I) that corresponded to the same audio files they listened to when they performed the intelligibility and comprehensibility ratings. The scale to rate foreign accent was also adapted from different sources (same as the comprehensibility scale mentioned above). This scale also consisted of 4 bands: 1-no foreign accent, 2-mild foreign accent, 3-strong foreign accent, and 4-very strong foreign accent. The listeners were also given benchmarks for each band and had the opportunity to do some practice before they started rating the data. Just as in the first session, listener-raters rated the first 34 speech samples, had a 10-minute break and continued with the last part.

Students who participated in this part of the study were not paid, but instead were offered some snacks and drinks from the researcher, which were gratefully accepted by the NESs.

3.5   Instructional Materials

The groups Native-Spanish-Speaking students participating in this study took the same upper-intermediate level course, English ID102. Both groups followed the same book which they bought in the previous semester when they covered units 1 to 6 in English ID101. During the English ID102 course, the students review units 7 to 12. The content of this course includes aspects of grammar, vocabulary, reading and listening comprehension based on the book. Speaking ability is implicitly included through an oral evaluation in the middle of the semester and through some exercises that the book presents throughout the content units.

For the explicit pronunciation instruction, the participants from the experimental group were presented with different kinds of materials: slides, copies of exercises, links from the internet, and books. As a reminder to the reader, the control group did not receive any kind of pronunciation training. The materials focused on the instruction of segmental as well as suprasegmental features. Sessions of 8 to 10 minutes were given at the end of class over a period of 12 weeks. Due to time constraints, the sessions were given once or twice a week. The agenda of the sessions on pronunciation, given to the experimental group, is presented in table 6. It includes the phonological components, which were taught during the semester:

Segmental Features	Suprasegmentals
Sounds of 'th' at the beginning, middle and end of words (voiced and voiceless sound of theta)	Counting syllables and syllable stress.
Consonant clusters starting with the phoneme /s/	Reduction and linking words.
Past tense of irregular verbs ending with 'ed' and its sounds /t/, /d/, /Id/	Thought groups and sentence stress
Difference between /s/ and /z/	Rhythm - stress words
Difference between /v/ and /b/	Old and given information
Nasals /m/, /n/, /ng/ in the middle and the end of words	Intonation
Tense vs. lax vowels	
Front, middle and back vowels	

Table 6- Agenda for Pronunciation Instruction

After three sessions, recycle sessions that included the aspects of phonology already studied in class were planned. However, this was not possible due to the syllabus of the course. In spite of this, the experimental group's instructor put emphasis on the target sounds, as needed, during the

course of the class. For example: in the case of suprasegmentals, if we were reviewing 'reported speech' I would draw their attention to the intonation of the two different types of questions (yes/no or wh- questions). The segmental and suprasegmental features of English were presented at random, that is, not all segmental features at once and then all the suprasegmental ones.

The methodology carried out followed the one presented by Derwing, et al.'s (1998) study with some changes. The changes resulting from the adaptation were derived from the availability of materials and human resources of an EFL setting, such as: having two groups (control and experimental group) instead of three (segmental group, global group and no instruction group), availability of NESs, and the access to the original materials used to elicit the control reading and the extemporaneous speech. Another mismatch between Derwing, et al., (1998)'s study and mine was the amount of pronunciation instruction the speakers received. While the participants from Derwing, et al. (1998) received 100-minutes of instruction per week, my students only received around 20 minutes. Once again, these differences were consequence from the setting in which each study took place: ESL and EFL.

3.6 Data Analysis

The treatment under which this data was analyzed will be described in the current section. Due to the fact that my first two research questions addressed the idea of improvement after explicit pronunciation training, the intelligibility and comprehensibility scores used to show such improvement were submitted to the same quantitative analysis.

3.6.1 Quantitative Analysis carried out for Intelligibility and Comprehensibility Scores

Since the data presented to the rater-listeners was at random, the first step in order to carry out the data analysis was the grouping of speakers according to the group they belonged to. That is, all the speakers from the control group were put together, as well as those who belonged to the experimental group. Within each group, the scores obtained were divided into two sub-categories: pre-test and post-test.

Mean comprehensibility scores were computed for each speaker during the pre-test and the post-test. Based on the type of data collected and the design of this study a statistical test was chosen as the best option. One of the objectives of a statistical test is "to test a hypothesis concerning the values of one or more population parameters" (Wakerly, Mendenhall, Scheaffer, 2002, p. 461). In other words the purpose of this test is to show evidence to support a hypothesis or to reject it. A two-sample statistical test (t-test) was carried out in order to state that the experimental and the control groups were on equal conditions in terms of intelligibility and comprehensibility before the study began.

As mentioned in the introduction of this chapter, two hypotheses concerning the improvement of intelligibility and comprehensibility were formulated in which I hypothesize that there will be an improvement after explicit pronunciation instruction. For this reason, each set of scores was submitted to a paired t-test. The purpose of carrying out this test was to find out if there was an

improvement in terms of intelligibility and comprehensibility. The data submitted for this test was the mean scores obtained during the pre-test (1st set of data) and the mean scores of obtained during the post-test (2nd set of data) for each group. As a result, four paired t-tests were carried out according to the dependent variables: intelligibility (control and experimental group) and comprehensibility (control and experimental).

Finally, a simple t-test was carried out in order to see which of the two groups had improved more. The data submitted for this test was the mean difference calculated from the subtraction of the mean scores obtained from the post-test minus the mean scores obtained from the pre-test of each group.

3.6.2 Quantitative Analysis for Foreign Accent

Although it was not the objective of my study to see a reduction in perceived foreign accent through pronunciation training, I decided to submit the scores obtained from the listener-raters to the same procedure described above. The reasons of performing such analysis were twofold. First, I wanted to compare my results to those obtained from Derwing et al. (1998), where they affirm that their participants showed an improvement on foreign accent after explicit pronunciation instruction. Second, I wanted the information to be displayed so that the reader could have the data that would support the section related to the correlation existing (or not) between accentedness and comprehensibility.

3.6.3   Correlation Between Foreign Accent and Comprehensibility

In order to find out if there was an existing correlation between the variables of comprehensibility and foreign accent, the Pearson *r* coefficient was computed. Since I was not interested in seeing if the control or experimental group were better than the other, I submitted all the scores obtained from each group during the pre and posttest. The results obtained would determine if there is a correlation between the aforementioned variables or not.

By carrying out such analysis I am addressing the third hypothesis of this study, which states that having a very strong foreign accent does not affect the comprehensibility of the message uttered.

In addition, not all the research design was based on a quantitative analysis. The qualitative analysis that took place addressed the study of intelligibility errors and their categorization.

3.6.4   Qualitative Analysis for Orthographic Transcriptions: Intelligibility

Each speech sample was orthographically transcribed by the researcher by listening to each one of the audio files as many times as needed. After the transcriptions were done, the number of words per utterance was counted. An intelligibility score was calculated for each of the 73 speech samples on the basis of the number of words that exactly matched the corresponding transcription. An intelligibility score was also computed for each of the utterances by taking the mean of the 8 listener-raters' scores for the utterance.

It was necessary to carry out a qualitative type of analysis was necessary to carry out in order to find the intelligibility problems encountered by the listener-raters. Even though this data analysis does not address any of the research questions of this study, I consider it important since it could yield interesting results regarding the errors that may cause intelligibility problems to the speakers. This analysis consisted of transcribing each utterance, as heard by the listener-raters, and pointing out the errors in transcriptions. A categorization of the type of errors made in the transcriptions was also carried out.

The results obtained from this data analysis are presented in Chapter 4, the interpretation of the latter will be discussed in Chapter 5.

CHAPTER IV: RESULTS

4.1   General Overview

Chapter three gave the most relevant information regarding the procedure of data collection. It presented the characteristics of the participants involved in the present study and the way in which recordings and ratings were carried out. One of the objectives of this chapter is to present the results obtained for the data analysis resulting from the scores given to NNESs' speech samples by NESs' raters in terms of intelligibility, comprehensibility and its relation with foreign accent.

For each dependent variable, the following information will be presented:

a) Statement of question /problem

b) Statement of null and alternative hypothesis

c) Output of statistical test

d) Statement of t-score and its significance

e) Interpretation of the Result Stating the rejection or not of the null hypothesis

f)   Summary of the Intelligibility Results

Finally, the results concerning the correlation existing (if any) between comprehensibility and foreign accent will be presented.

4.2 Intelligibility Scores

4.2.1 Statement of Question/Problem

The research question regarding the improvement of intelligibility is cited below from Chapter 1:

Will students from the experimental group be more intelligible at time 2 than   at time 1 compared to students from the control group?

In order to be able to answer this question paired t-tests were used for the data obtained from the control and experimental group. One of the assumptions underlying this question was that there would be an improvement in terms of intelligibility in the speakers of the experimental group, who are the ones who received the explicit pronunciation instruction over a period of 12 weeks. On the contrary, and since the participants from the control group did not receive any type of pronunciation training, little to no improvement was expected in terms of intelligibility from the pre-test to the post-test for them.

4.2.2 Homogeneity of Both Groups before the Experiment in terms of Intelligibility

In order to assure that the experimental and control groups were comparable at the beginning of the study a t-test was carried out. This t-test compared the scores obtained during the pre-test of both groups. The hypotheses for this test were the following:

Null Hypothesis: The mean intelligibility scores for the pre-test of the control and experimental group are the same. H_o: $\mu_{pre-control} - \mu_{pre-experimental} = 0$

Alternative Hypothesis: The mean intelligibility scores for the pre-test of the control and experimental group are different. H_a: : $\mu_{pre-control} - \mu_{pre-experimental} \neq 0$

Table 7 shows the samples of the control (18 students) and the experimental (16 students) groups. It also shows the mean intelligibility scores for both groups, where it can be observed that the estimated difference is -0.16, indicating that both groups were homogeneous and that any improvement in terms of intelligibility can be attributed to the presence of pronunciation training.

The third column shows the standard deviation, which shows how spread out the data is from the mean. As observed the high scores indicate that data are spread along the curve.

	N	Mean	StDev
Pretest Control	18	82.7	21.8
Pretest Experimental	16	82.8	16.9
Estimate for difference: -0.159236			
95% CI for difference: (-13.906171, 13.587699)			
Tc = 2.04 (critical value for t)			
Ts= -0.02 (obtained t-score)			
DF = 32			

Table 7 – Two-Sample t-test and Confidence Interval for Mean intelligibility scores of the Control and Experimental Group during the pre-test

In the case of a two-tailed decision, if the t-score obtained is higher than the critical value for *t,* the null hypothesis should be rejected. If the absolute

value of the t-score obtained (-0.02) is 0.02 and this one is lower than the critical t-value (2.04), the null hypothesis cannot be rejected. *Since the t-score obtained is smaller than the critical value for t, there is no difference between the mean intelligibility scores of the control and the experimental group during the pre-test.* Therefore, a comparison within groups can be carried out to see if the intelligibility scores remain the same during the pre and post-test (in the case of the control group) or if there was any improvement (in the case of the experimental group) as a result of lack or presence of pronunciation training.

The following section presents the results obtained after comparing the mean intelligibility scores collected during the pre and post-test for the control group.

4.2.3 Intelligibility Scores of Control Group

As a reminder to the reader, the intelligibility task consisted of orthographical transcriptions of each audio stimulus. As expected, the five speech samples produced by the NESs got perfect intelligibility scores. The mean intelligibility scores resulted from the adding of each score divided among the 8 listener-rates. It was used a 100-scale, where 100 equals 100% intelligible and 0 means that the speakers was not intelligible at all.

The intelligibility scores for the participants of the control group during the pre-test ranged from 62.6% to 100%. However, during the post-test, the scores ranged from 5% to 98.8%. In terms of intelligibility, a surprising decrease can be noticed. This affirmation is made under the observation of the mean scores from the pre-test (82.68%) and the post-test (69.48%), with a difference of 13.2%.

Not very surprisingly, the 3 speakers who got the highest scores during the pre-test were the same who got the highest scores during the post-test.

4.2.3.1 Statement of Null and Alternative Hypothesis

The hypotheses for this statistical test can be stated as follows:

Null hypothesis: there is no difference among the mean scores of the pre-test and those of the post-test. H_o: μ_{pre} - μ_{post} = 0

Alternative hypothesis: There is a difference in the mean scores of the group between the pre-test and the post-test. H_a: μ_{pre} - μ_{post} ≠ 0

Since the students from the control group did not receive explicit pronunciation instruction, it was expected to see the same mean scores during the pre-test and post-test. And because I cannot be certain whether the results from the post-test will be better or worse than those from the pre-test, the procedure for testing the null-hypothesis for the control group (only) requires a two-tailed decision.

The following table shows us the t-test carried out on the mean intelligibility scores of the control group.

	N	Mean	StDev
Pretest	18	86.82	11.47
Posttest	18	69.43	28.82
Difference	18	17.39	29.77
95% CI for mean difference: (2.59, 32.20)			
Tc= 2.11 (critical value for *t)*			
Ts= 2.48 (obtained t-score)			

Table 8 - Statistical Test and Confidence Interval for Mean Intelligibility Scores of the Control Group

Table 8 shows that the control group had a sample of 18 students. The second column presents the mean intelligibility scores during the pretest (86.88) and the posttest (69.43), as well as the difference between the tests' mean scores (17.39). The following column, under the heading of standard deviation, indicates the spread of the data around the mean score. As observed in the data from this column, high scores point out that the data is spread out along the curve, especially for the scores of the post-test.

With 95% confidence, the true mean difference between the two tests falls between 2.59 and 32.20 values. This shows that the mean intelligibility score related to the pretest is higher than the mean intelligibility scores of the posttest. These results, not only indicate that the mean scores for the pre and post-test are not the same, but also that the intelligibility scores during the post test decreased.

The interpretation of the t-score, which will be used in order to reject or accept he null hypothesis, is presented in the following figure.
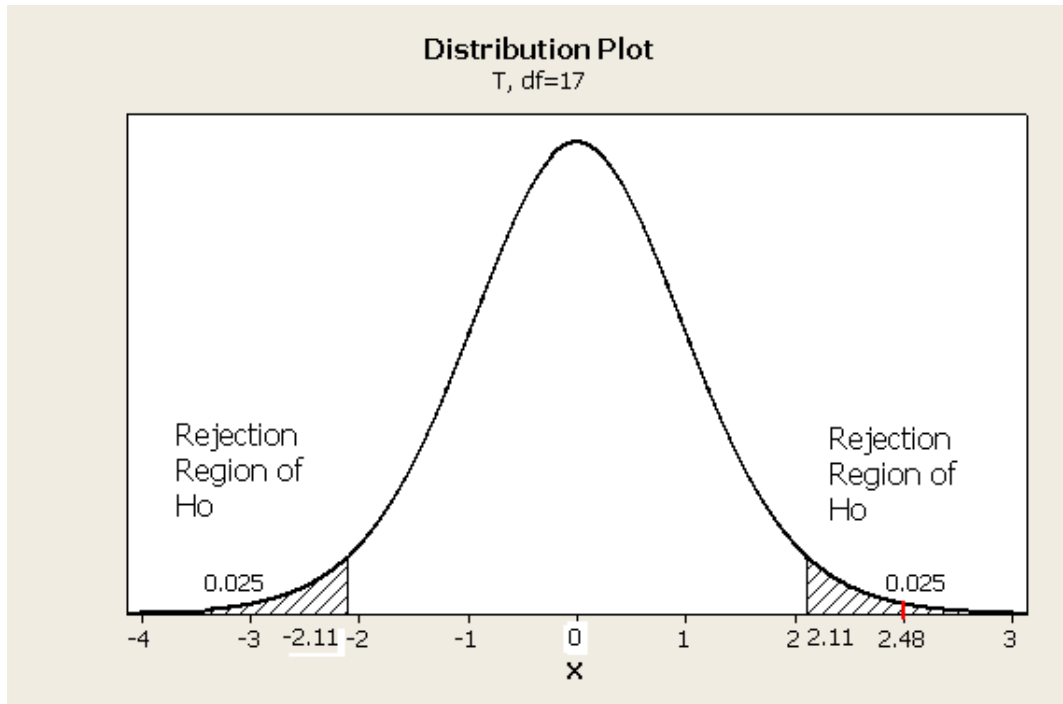
Figure 3 – Distribution Plot of 2-tailed t-test Intelligibility Scores for the Control Group

The figure above shows the results of the statistical test carried out for the control group. With a degree of freedom of 17 we have a critical value for *t* of 2.11 at the 95% confidence level (α= .05). According to the procedure for interpreting the results of the t-test, the null hypothesis should be rejected if t_s is higher than t_c. Since the *t* score yielded is 2.48, which is higher than t_c (2.11), the obtained result is statistically significant and the null hypothesis is rejected, which means that *the mean intelligibility scores for the control group are different between the pre and post-test*. From the t-score obtained I can also observe that the scores during the post-test are lower.

4.2.3.2   Conclusion for Intelligibility and Control Group

As shown in Table 8 and Figure 3, the results are statistically significant and we must *reject the null hypothesis*, which states that the mean intelligibility scores of the control group are the same during the pretest and the posttest. Therefore, it can be said that *the intelligibility scores found during the pretest were not the same as the ones from the posttest*, something which was not expected. However, the results also indicate that there was not only no improvement in terms of intelligibility in the students from the control group but rather a worsening. Although an improvement was not expected, but rather similar scores in both tests, it was not contemplated to observe a worsening in terms of intelligibility.

4.2.4 Intelligibility Scores of Experimental group

The same procedure applied to the data from the control group, was applied to the scores obtained in terms of intelligibility of the speakers from the experimental group. The intelligibility scores for the participants of the experimental group during the pre-test ranged from 50% to 98.8%, which, in comparison with the speakers from the control group, is significantly lower (62.6% and 100% respectively). This shows us, that the participants from the experimental group were less intelligible overall, than the ones from the control group at the beginning of the study. However, statistically speaking and as shown from the simple t-test both groups were still comparable at the beginning of the study.

On the other hand, during the post-test the scores ranged from 46.5% to 98.5%. It is noticeable that the scores obtained from the latter are higher in respect to the scores from the control group.

4.2.4.1   Statement of Null and Alternative Hypothesis

Null hypothesis: there is no difference between the mean scores of the pre-test and those of the post-test. H_o: $\mu_{pre} - \mu_{post} = 0$

Alternative hypothesis: students will score higher on the post-test than on the pre-test. H_a: $\mu_{pre} - \mu_{post} < 0$

A one-tailed decision will be taken into account for this Hypothesis test, since, as described in the alternative hypothesis I am expecting to observe an improvement in terms of intelligibility during the post-test in the students of the experimental group.

The following table shows us the t-test carried out on the mean intelligibility scores of the experimental group.

Table 9 shows that the experimental group had a sample of 16 students. The second column presents the mean intelligibility scores during the pretest (82.23) and the posttest (81.02), as well as the difference in scores from one test to the other. With this, it is observed that the mean intelligibility score from the pretest is slightly higher than the one obtained during the posttest. The column under the heading of standard deviation indicates how far the data is from the mean score. As observed in the data from this column, the high scores point out that the data is spread out along the curve.

	N	Mean	StDev
Pretest	16	82.84	16.89
Posttest	16	81.11	14.78
Difference	16	1.72	17.11
95% upper bound for mean difference: 9.22913 T_c= 1.75 (critical value for *t)* T_s= 0.40 (obtained t-score)			

Table 9– Statistical Test and Confidence Interval for Mean Intelligibility Scores of Experimental Group

With 95% confidence, the true mean difference between the two test results falls below 9.22. This indicates that the there is not enough information to say that the intelligibility scores during the posttest were higher than those from the pretest. The interpretation of the obtained t-scores, which will be used in order to reject or accept the null hypothesis, is presented in Figure 4.

Figure 4 shows the results of the statistical test carried out for the experimental group. With a degree of freedom of 15 we have a critical value for t of 1.75 at the 95% confidence level (α=.05) . Since the statistical test showed a t-score of 0.40, which falls below the critical value of t (0.40 < 1.75), the result is not significant (i.e., it falls outside the rejection region of Ho), the null hypothesis must be accepted, which means that the mean intelligibility scores obtained during the pre and post-test were the same.
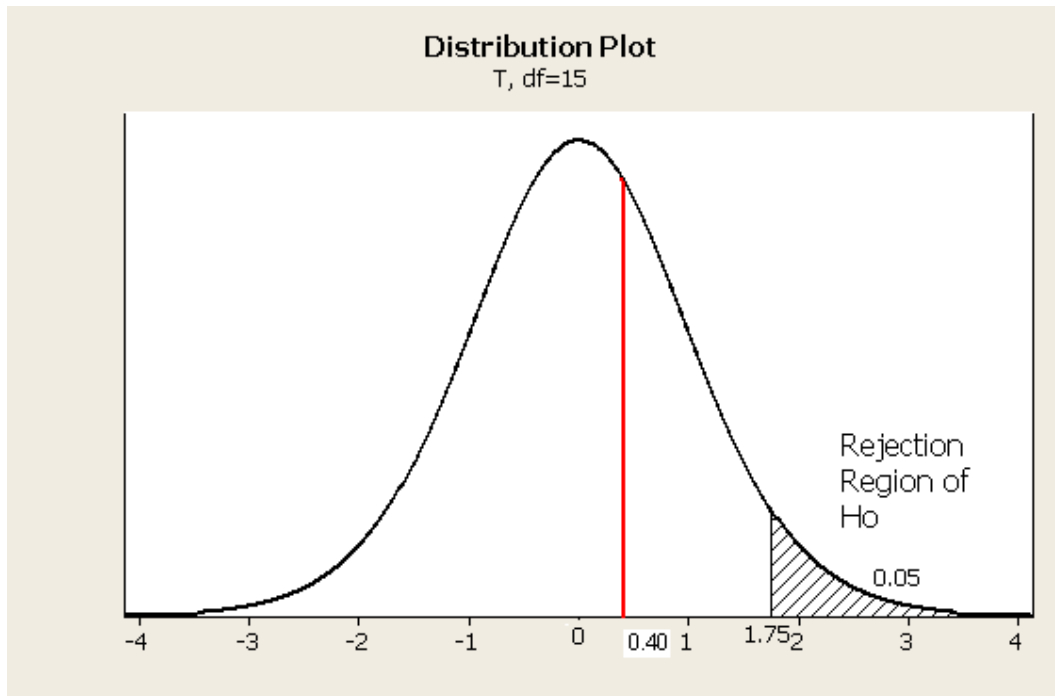
Figure 4 - Distribution Plot of 1-tailed t-test intelligibility Scores for the experimental group

4.2.4.2   Conclusion for Intelligibility and Experimental Group

As shown in table 9 and Figure 4, the results are not statistically significant. For this reason, *the null hypothesis fails to be rejected*, which means that the mean intelligibility scores of the experimental group during the post test are not higher than the scores obtained during the pretest. This indicates that there was not an improvement in terms of intelligibility in the students from the experimental group.

4.2.5 Summary of the Intelligibility Results

After having examined the intelligibility scores obtained by students from the experimental group, it was observed that, contrary to my expectations, the experimental group did not show any improvement of this variable. Therefore, I was not able to perform a 2-sample t-test, as previously planned, in order to show that the students from the experimental group had improved in terms of intelligibility compared to the students from the control group. Only if the experimental group had shown an improvement on this variable for the within-group t-test, it would have been possible to compare it across groups to the control group.

On the contrary, however, it was observed that both the experimental and the control groups received lower scores during the post-test. Even though the scores obtained by the control group during the post-test were much lower than those of the experimental group post-test, it was not my intention to use a t-test to find out which group's decrease in scores was less worse.

4.2.6 Orthographic Transcriptions

The orthographic transcriptions of the NESs were completely free of errors, indicating that the directions were clearly understood by the listener-raters and that the quality of the audio files was clear and good. As a reminder to the reader, orthographic transcriptions of short audio stimulus of NNESs and NESs were made by NESs. The purpose of this task was to see how intelligible NNESs were, the more accurate the transcription was, the more intelligible the speaker.

A frequency of the various types of transcription errors cannot be presented with numbers since the collected data does not lend itself to give it a quantitative treatment; instead, a qualitative data analysis of the types of errors and the possible reasons underlying each one will be explained. Two subsections will be found below used to classify the types errors are: chunk predictions and perception of –ed in regular verbs.

4.2.6.1 Chunk Phrases

This type of error is related to the action of predicting what the speaker is saying just by paying attention to the word in context. More specifically, to the ability of listener-raters as NESs to guess the words uttered after listening to the whole audio file. This was very common with the use of some prepositions and verb tenses.

Regarding the use of prepositions, the following example is presented:

Speaker 3: I am planning to stay <u>in</u> home with my family
Listener 1: <u>**Stay at home**</u> with my family
Listener 2: I plan to stay in home with my family
Listener 3: I am planning to <u>**stay at home**</u> with my family
Listener 4: I wanted to stay in home with my family
Listener 5: I wanted to <u>**stay at home**</u> with my family
Listener 6: I am going to stay in home with my family
Listener 7: I am going to stay in home with my family
Listener 8: I am going to stay in home with my family

Table 10– Orthographic transcription of Audio file no. 3

As shown in Table 10, 3 out of 8 listeners wrote *stay at home*, instead of *stay in home*. The use of the preposition *at* could be triggered by the use of *stay*, which is a chunk phrase.

The following example is also related to the use of prepositions. The use of the preposition *of* by the speaker could be a result of L1 interference.

I don't see anyone of my family much
Listener 1,2,3,6,8: I don't see **anyone in my family** much
Listener 4, 5: I don't see **anymore of my family** much
Listener 7: I don't see **anyone of my family** wort

Table 11 – Orthographic Transcription of Audio File no. 52

As observed, it is grammatically correct to say *anyone in my family* rather than *anyone of my family*.

The following transcriptions are related to the cases where the pronoun predicted the use of certain verbs or auxiliaries. The frequency of this error is 3 out of 8.

Speaker 21: My sister is married **she have** one son
Listener 1: My sister is my … **she has** one son
Listener 2,3,4: My sister is married, **she has** one son
Listener 5: My sister is myreed **she has** one son
Listener 6, 8:My sister is married **she have** one son
Listener 7: My sister is married **she had** one son

Table 12– Orthographic Transcription of audio file no. 21

As Table 12 shows, it is more likely that the auxiliary verb 'has' would be following the third person singular and not 'have', which was the word used by the speaker.

The next error transcriptions also present transcription errors as a result of phrase clusters and the use of the present perfect.

All of my brothers <u>are get</u> married
Listener 1, 3,6: All of my brothers **<u>have get</u>** married
Listener 2,4,5,8: All of my brothers are get married
Listener 7: All of my brothers **<u>are got</u>** married

Table 13- Orthographic transcription of audio file no. 01

As the majority of these cases have shown, it is assumed that the raters did not necessarily understand each word uttered by the speakers, which leaves room to question how trustworthy it is to use NESs as raters, especially for an intelligibility task as the one used in the current study.   As a reminder to the reader, NESs first listened to the audio file and then proceeded to make the transcription, not forgetting that as described in chapter 3 these audio files were short enough to avoid memory problems. As a result, if the listeners could not understand the function words, such as prepositions and auxiliaries, but if they understood the content words with no problem, they might have guessed the function words used according to the content words of the utterance.

4.2.6.2 Perception of '-ed' in Regular Verbs

During the transcription analysis, it was also noted the differences in production on behalf of speakers and the transcription made by NESs regarding the '–ed'

of the past tense of regular verbs. There were 9 utterances that included the use of a regular verb in the past tense.

There were two situations in which the perception and transcription of 'ed' were present. The first one is related to the writing of an utterance with a regular verb in past tense, even though this was not produced by the listener. This case was noticeable in 5 out of 9 of these utterances:

The speaker said:	The listener-rated transcribed (frequency):
I *try* to do exercise	I *tried* to do exercise (1/8)
In my last vacations I'm *visit* to my family in Tlaxcala	In my last vacations I *visited* my family in Tlaxcala (1/8)
I *study* Psychology because I like the human mind	I *studied* Psychology…(2/8)
When I *start* the university I stopped the gym	When I *started* the university… (4/8)
I don't know we *search* for an activity	I don't know we *searched* for an activity (3/8)

Table 14 –Perception of –ed when it was not produced by speakers

By looking at some of these examples the reader might get the impression that these error transcription were driven by the triggering of some content word that indicated the use of the past tense, such as *In my last vacation* or *when*. However, not all of the utterances have such content words in the utterance. In fact, there is not enough information within the same utterance to make such an inference. Also, the listener-raters were not informed about the topics that the speakers had to talk about. In this sense, they did not have any information of the content of the audio files but still, heard an '-ed' where there was not any.

The second situation of the perception of '-ed' is related to the actual production of this segment by the speakers and the lack of perception on the part of the listeners. The transcription of what the speaker said and what the listeners transcribed are presented below.

The speaker said:	The listener-rated transcribed (frequency):
Recently I *stayed* in my house	Recently I *stay* in my house (8/8)
I *used* to spent like three hundred dollars	I *use* to spent like three hundred dollars (1/8)
In my during last vacations I *worked*	In my during last vacations I *work* (3/8)
When I start the university I *stopped* the gym	When I start the university I *stop* the gym (3/8)

Table 15– No perception of –ed when produced by speakers

As can be seen from table 15, the four verbs used by the speakers in past tense contain the use of the phoneme /t/ (stopped and worked) and /d/ (used, stayed) as variations of the '-ed'. None of them include the production of /Id/, which let us to assume that due to the similarity of the orthographic transcription and the production of these verbs (i.e., wanted, visited), there is no transcription error of the spoken form and its transcription. In other words, verbs which are read the same way they are written do not cause any pronunciation problems to Spanish speakers, they are straightforward.

Overall, the error transcriptions demonstrated by the listeners can be labeled into different categories such as: omissions of function words, substitutions of words that did not alter the meaning of the utterance, and addition of function words.

The question underneath the whole issue of intelligibility remains: Can we assume these transcription errors are due to a lack of intelligibility? Could the listener get the main idea of the utterance? This can only be known through the data analysis of comprehensibility and its correlation to intelligibility, which is presented in the following section.

The error transcriptions presented above may give the impression that speakers were not intelligible and this may lead to the conclusion that they were not comprehensible either. In this regard, it may sound logical to think that if listener-raters transcribed the utterances incorrectly (i.e., with a lot of mistakes), as a consequence the speaker would have a low score on intelligibility. However, it is important to understand that intelligibility and comprehensibility are two concepts that although they co-exist, they don't necessarily relate to one another because, as I explained in chapter 2, intelligibility refers to the speaker's ability to identify the words within an utterance while comprehensibility stands for the ability to understand the main idea of the words uttered. Therefore, the listener-rater may not have been able to identify each word as spoken by the speaker, but he/she may have realized that the speaker was talking about (i.e. the number or children the speaker's sister has). Thus, comprehensibility scores rely on the speakers' ability to decode the message. The results concerning the analysis of the comprehensibility scores are presented in the following section.

4.3   Comprehensibility Scores

The present section shows the results obtained by the speakers in terms of comprehensibility. In this sense, comprehensibility is defined as the subjective assessment of ease or difficulty of a message (Derwing, Munro, and Wiebe, 1998). The results within this variable are presented according to the group to which the speakers belonged: the control group or experimental group. In a second part, a t-test will be carried out in order to compare the improvement made by the speakers of the control and experimental group.

As a reminder to the reader, the speakers were rated in terms of comprehensibility with the help of a 4-level Likert scale (1-very easy to understand, 2-a bit difficult to understand, 3-very difficult to understand, 4-impossible to understand). It is important that the reader of this document has this in mind when interpreting the tables below. This translates to the following rule: the lower the score, the better the performance of speakers which means better comprehensibility. For this reason, it was expected to observe 3s and 4s during the pretest and 1s and 2s (which are lower scores) during the posttest. Throughout the following section, I will follow the same organization as above, presenting for each dependent variable, the following information:

a) Statement of question /problem

b) Statement of null and alternative hypothesis

c) Output of statistical test

d) Statement of t-value and its significance

e) Interpretation of the Result Stating the rejection or not of the null hypothesis

f) Summary of the Comprehensibility Results

4.3.1 Statement of the Problem/Question

It is expected that the students from the control group will not attain any improvement in terms of comprehensibility in relation to the pre-test. In other words, equal scores during both the pre and post-test are expected to be found. On the contrary, a significant improvement is expected to be observed in the speakers of the experimental group during the post-test as a result of the explicit pronunciation instruction they received.

The research question that will be answered from this data analysis is cited below:

Will students from the experimental group be more comprehensible at

time 2 than at time 1 compared to the students from the control group?

Even though the students from the control group were not exposed to an explicit pronunciation instruction, it is important to know how they scored in terms of comprehensibility. These results will help determine whether or not the students improved, or if they scored the same in the post-test and the pre-test.

4.3.2 Homogeneity of Both Groups in terms of Comprehensibility

In order to see whether the experimental and control group were comparable at the beginning of the study a t-test was carried out. This t-test compared the

scores obtained during the pre-test of both groups. The hypotheses for this test were the following:

Null Hypothesis: The mean comprehensibility scores for the pre-test of the control and experimental group are the same. H_o: $\mu_{pre-control} - \mu_{pre-experimental} = 0$

Alternative Hypothesis: The mean comprehensibility scores for the pre-test of the control and experimental group are different. H_a: : $\mu_{pre-control} - \mu_{pre-experimental} \neq 0$

Table 16 shows the samples of the control (18 students) and the experimental (16 students) groups. It also shows the mean intelligibility scores for both groups, where it can be observed that the estimate difference is -0.000903, indicating that both groups were homogeneous at the beginning of the study and that any improvement in terms of intelligibility can be attributed to the presence of pronunciation instruction.

	N	Mean	StDev
Pretest Control	18	1.767	0.524
Pretest Experimental	16	1.768	0.632
Estimate for difference: -0.000903			
95% CI for difference: (-0.411016, 0.409210)			
T_c= 2.04 (critical value for *t)*			
T_s= -0.00 (obtained t-score)			
DF = 29			

Table 16 – Two-Sample t-test and Confidence Interval for Mean Comprehensibility scores of the Control and Experimental Group during the pre-test

The third column shows the standard deviation, which shows how spread out the data is from the mean. As observed the high scores indicate that data are spread along the curve.

In the case of a two-tailed decision, if the critical value for *t* is higher than the t-score obtained, the null hypothesis should be accepted. If the absolute value of the t-score obtained (-0.00) is 0.0 and this one is lower than the critical t-value (2.04), the null hypothesis cannot be rejected. *Since the t-value obtained is smaller than the critical value for t, there is no difference between the mean comprehensibility scores of the control and the experimental group during the pre-test.* Therefore, a comparison within groups can be carried out to see if the comprehensibility scores remain the same during the pre and post-test (in the case of the control group) or if there was any improvement (in the case of the experimental group) as a result of lack or presence of pronunciation training.

The following section presents the results obtained after comparing the mean comprehensibility scores collected during the pre and post-test for the control group, followed by the comprehensibility scores obtained by the participants of the experimental group.

4.3.3 Comprehensibility Scores of Control Group

The range of mean comprehensibility scores per speaker went from 1 to 2.625 during the pre-test. On the other hand, the range of mean comprehensibility scores during the post test ranged from 1.125 to 4. The mean comprehensibility score for this group during the pre-test was 1.763, and during the post-test, 2.229. Overall, and without having carried out any statistical test, it is noticeable

that the mean comprehensibility scores during the post test are higher than those of the pre-test, which means that there was no improvement in terms of comprehensibility for the control group.

4.3.3.1   Statement of Null and Alternative Hypothesis

Null hypothesis: there is no difference among pairs of measurements in the population (i.e., student scores will not differ from the pretest to the posttest). H_o: $\mu_{pre} - \mu_{post = 0}$

Alternative hypothesis: There is a difference in the mean scores of the group between the pre-test and the post-test. H_a: $\mu_{pre} - \mu_{post} \neq 0$

As mentioned earlier (section 4.2.3.1) due to the design of the null and alternative hypothesis for the control group (only) the following Hypothesis testing requires a two-tailed decision.

	N	Mean	StDev
Pretest	18	1.764	0.525
Posttest	18	2.229	0.923
Difference	18	-0.465	1.061
95% CI for mean difference: (-0.993, 0.063)			
T_c= 2.11 (critical value for *t*)			
T_s = -1.86 (obtained t-score)			

Table 17- Statistical Test and Confidence Interval for Mean Comprehensibility Scores of Control Group

Table 17 shows that the control group had a sample of 18 students. The second column presents the mean comprehensibility scores during the pretest

(1.764) and the posttest (2.229), as well as the difference in scores from one test to the other (-0.465). The following column under the heading of standard deviation indicates how far the data is from the mean score. As observed in the data from this column, the high scores point out that the data is spread out along the curve. However, compared to the intelligibility scores presented above, these scores are much closer to the mean, hence, there is less spread along the curve.

With 95% confidence, the true mean difference between the two tests falls between -0.993 and 0.063 values. The interpretation of the t-score, which will be used in order to reject or fail to reject the null hypothesis, is presented in the following figure.
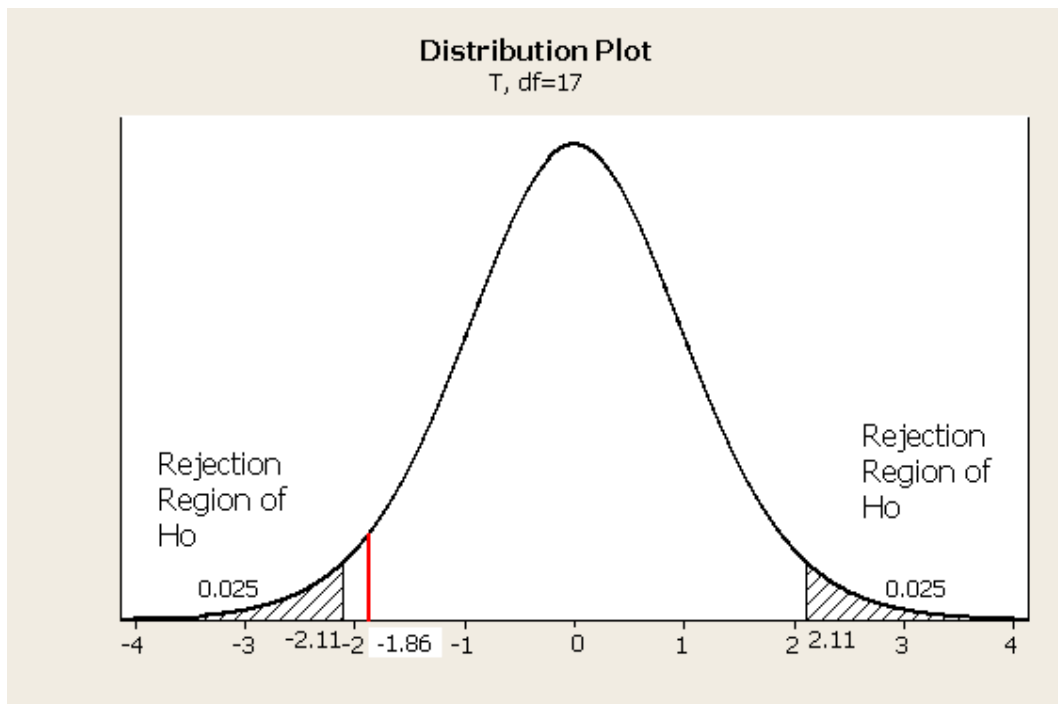
Figure 5 - Distribution Plot of 2-tailed t-test Comprehensibility for the Control Group

Figure 5 shows the results of the statistical test carried out for the control group. With a degree of freedom of 17 we have a critical value for t of 2.11 at the 95% confidence level (α=.05). According to the procedure for interpreting the results of the t-test, the null hypothesis should be rejected if t_s is higher than t_c. Since the *t* score yielded is -1.86, which is lower than t_c (2.11) the null hypothesis is not rejected, which means that can be said that the mean intelligibility scores for the control group are not different during the pre and post-test.

4.3.3.2 Conclusion for Comprehensibility and Control Group

As shown in table 17 and Figure 5, there is not enough confidence to say that the results are statistically significant and we must accept *the null hypothesis*, which means that the mean comprehensibility scores of the control group during the post test are not different to the scores obtained during the pretest. This indicates that the performance of the participants did not vary from the pretest to the posttest. Statistically speaking the students from the control group performed the same during both tests, which is an expected result since this group of participants did not receive any pronunciation training.

4.3.4 Comprehensibility Scores for Experimental Group

The scores obtained during the pre-test per speaker ranged from 1 (easy to understand) to 2.75 (closer to 3 – very difficult to understand). The mean comprehensibility score for the pre-test was 1.76, which tells us that students were not really incomprehensible before they were instructed in pronunciation.

During the post-test, after receiving the explicit pronunciation instruction, the mean scores per speaker ranged from 1(easy to understand) to 3.125 (very difficult to understand). Overall, the mean comprehensibility score during the post-test was 1.97, indicating no improvement in comprehensibility.

4.3.4.1   Statement of Null and Alternative Hypothesis

The hypotheses for the statistical test for the comprehensibility scores of the participants of the experimental group are the following:

Null hypothesis: there is no difference among pairs of measurements in the population (i.e., student scores will not differ from the pretest to the posttest). H_o: μ_{pre} - μ_{post} = 0

Alternative hypothesis: students will score higher on the pre-test than on the post-test. H_a: μ_{pre} - μ_{post} > 0

A one-tailed decision will be taken into account for this Hypothesis test, since, as described in the alternative hypothesis I am expecting to observe an improvement in terms of comprehensibility during the post-test in the students of the experimental group. It is worth noting here that an improvement in terms of comprehensibility will be translated in lower scores during the post-test.

	N	Mean	StDev
Pretest	16	1.766	0.632
Posttest	16	1.977	0.567
Difference	16	-0.211	0.653
95% lower bound for mean difference: -0.497			
T_c= 1.75 (critical value for *t*)			
T_s=-1.29 (obtained t-score)			

Table 18 - Statistical Test and Confidence Interval for Mean Comprehensibility Scores of Experimental Group

Table 18 shows that the experimental group had a sample of 16 students. The second column presents the mean comprehensibility scores during the pretest (1.766) and the posttest (1.977), as well as the difference in scores from one test to the other (-0.211). The following column under the heading of standard deviation indicates how far the data is from the mean score. As observed in the data from this column, the high scores point out that the data is spread out along the curve.

With 95% confidence, the true mean difference between the two test results falls above -0.497. This indicates that the there is not enough information to say that the comprehensibility scores during the posttest were lower than those from the pretest, indicating no improvement in terms of comprehensibility. The interpretation of the t-score obtained, which will be used in order to reject or accept the null hypothesis, is presented in Figure 6.

Figure 6 shows the results of the statistical test carried out for the experimental group. With a degree of freedom of 15 we have a critical value for *t* of 1.75. Since the statistical test showed a t-score of -1.29, which falls below the critical value of *t* (-1.29 < 1.75), the result is not significant (i.e., it falls outside the rejection region of Ho), the null hypothesis must be accepted. Therefore it cannot be said that there was an improvement in terms of comprehensibility for the students in the experimental group. Hence, statistically speaking the mean comprehensibility scores during the pre-test and post-test were the same.
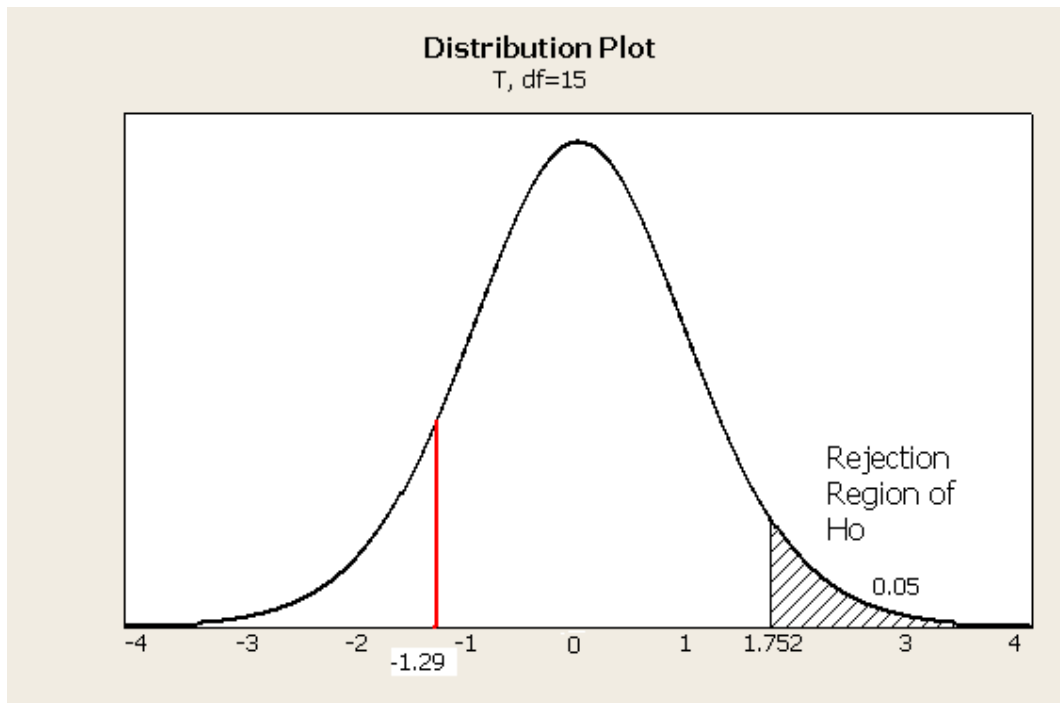

Distribution Plot
T, df=15

Rejection Region of Ho

0.05

-1.29

-4   -3   -2   -1   0   1   1.752   3   4

Figure 6 - Distribution Plot of 1-tailed t-test Comprehensibility for the Experimental Group

4.3.4.2 Conclusion for Comprehensibility and Experimental Group

As shown in Table 18 and Figure 6, contrary to my expectations, the results are statistically significant to accept *the null hypothesis*, which means that the mean comprehensibility scores of the experimental group during the post test are not different from the scores obtained during the pretest.

4.3.5 Summary of the Comprehensibility Results

Similarly to the discussion in section 4.2.5, which refers to the lack of improvement observed in terms of intelligibility in the students of the experimental group, contrary to my expectations, I was not able to perform a two sample t-test, previously planned, in order to show that the students from the experimental group had improved in terms of comprehensibility compared to the students from the control group.

So far, each of the dependent variables of this study has been analyzed separately. The main objective of this analysis was to show if there was an improvement in terms of intelligibility and comprehensibility from the pretest to the posttest, with a special attention given to the performance of the experimental group. Although it was not the aim of the current study to see if there was a reduction of the perceived foreign accent after explicit pronunciation training, the following section presents the results obtained in perceived foreign accent. The reason why I have decided to present it is twofold. First, I will be able to contrast and compare my results to those of Derwing et al. (1998), in which an improvement of foreign accent was perceived in the students of the

three groups (global, segmental and no treatment). Second, this data will be useful in order to find a correlation between this variable and comprehensibility.

4.4   Perceived Foreign Accent

Foreign Accent is presented in this section, in order to show if there was any improvement for the students of the experimental group as a consequence of the pronunciation instruction. However, the present section will not answer directly any of my research questions. The reason why I decided not to focus on the reduction of foreign accent was due to my belief that having a foreign accent does not affect comprehensibility. Besides, in my pronunciation instruction I never consider teaching either segmentals or suprasegmentals in order to reduce my students' foreign accent, but to improve intelligibility. However, its results will be useful to determine the correlation existing between the latter and comprehensibility.

4.4.1   Statement of the Problem

Derwing et al. (1998) found that foreign accent decreased in the speeches of their participants, who were enrolled in a full-time ESL program studying in a University in Canada. Among the three groups that participated in their study, it was found that all of them, even the students from the group that had no explicit pronunciation training, had reduced their perceived degree of foreign accent.

Foreign Accent scores were elicited by the same NESs who rated comprehensibility. They used a 4-point scale to perform such task where 1 – no

foreign accent, 2- mild foreign accent, 3- strong foreign accent and 4- very strong foreign accent. As can be seen from the scale, the lower the score the better. Therefore it was expected to see lower scores during the post-test.

The scores obtained during the pre-test per speaker ranged from 1.75 (mild foreign accent) to 3.13 (closer to 3 – strong foreign accent). It was noticeable that none of the speakers during the pre-test got a score of 4 (very strong foreign accent). The mean comprehensibility score for the pre-test was 2.50.

During the post-test, the mean scores per speaker ranged from 1.75 (close to mild foreign accent) to 3.88 (very strong foreign accent). Overall, the mean foreign accent score during the post-test was 2.55, indicating no improvement.

The following section presents the results of the two-sample t-test carried out with the purpose of establishing that the experimental and the control groups were homogeneous.

4.4.2 Homogeneity of Both Groups in terms of Perceived Foreign Accent

The two-sample t-test carried out included the analysis of foreign accent scores obtained during the pre-test from the experimental and the control group. The hypotheses for this test were the following:

Null Hypothesis: The mean accentedness scores for the pre-test of the control and experimental group are the same. H_o: $\mu_{pre\text{-}control} - \mu_{pre\text{-}experimental} = 0$

Alternative Hypothesis: The mean accentedness scores for the pre-test of the control and experimental group are different. H_a: : $\mu_{pre\text{-}control} - \mu_{pre\text{-}experimental} \neq 0$

Because it is expected to see that the groups are homogeneous, the null hypothesis should be accepted. The results of the t-test yield the following results:

	N	Mean	StDev
Pretest Control	18	2.503	0.410
Pretest Experimental	16	2.408	0.591
Estimate for difference: 0.094653			
95% CI for difference: (-0.267965, 0.457271)			
T_c= 2.04 (the critical value for *t*)			
T_s= 0.54 (obtained t-score)			
DF = 26			

Table 19 – Two-Sample t-test and Confidence Interval for Mean Foreign Accent scores of the Control and Experimental Group during the pre-test

As can be observed from Table 19, it describes the number of participants of the control group (18) and the experimental group (16). It also presents the mean foreign accent scores obtained by the control group (2.503) and the experimental group (2.408). Likewise, this table shows how the foreign accent scores are spread along the curve through the standard deviation. As observed from table 18, the difference between the mean foreign accent scores is statistically significant which means that both groups were in equal conditions at the beginning of the experiment. Therefore, any improvement in terms of

accentedness will most likely be due to the presence of pronunciation training (in the case of the experimental group)

In the case of a two-tailed decision, if the critical value for *t* is higher than the t=score obtained, the null hypothesis should be rejected. Since the absolute value of the t-score obtained is 0.54 and it is lower than the critical t-value (2.04), the null hypothesis cannot be rejected. *This means that the mean accentedness scores of the control and the experimental group during the pre-test are the same.* Therefore, a comparison within groups can be carried out to see if the foreign accent scores remain the same during the pre and post-test (in the case of the control group) or if there was any improvement (in the case of the experimental group) as a result of lack or presence of pronunciation training.

The following section presents the results obtained after comparing the mean foreign accent scores obtained during the pre and post-test for the control group.

4.4.3 Foreign Accent Scores for Control Group

4.4.3.1 Statement of Null and Alternative Hypothesis

The hypotheses for the statistical test for the accentedness scores of the participants of the control group are the following:

Null hypothesis: there is no difference among pairs of measurements in the population (i.e., student scores will not differ from the pretest to the posttest).

Ho: $\mu_{pre} - \mu_{post} = 0$

Alternative hypothesis: There is a difference in the mean scores of the group between the pre-test and the post-test. H_a: $\mu_{pre} - \mu_{post} \neq 0$

	N	Mean	StDev
Pretest	18	2.503	0.097
Posttest	18	2.550	0.138
Difference	18	-0.047	0.155
95% CI for mean difference: (-0.373, 0.279)			
T_c= 2.11 (critical value for *t*)			
T_s= -0.31 (obtained t-score)			

Table 20 - Statistical Test and Confidence Interval for Mean Foreign Accent Scores of Control Group

Table 20 shows that the control group had a sample of 18 students. The second column presents the mean comprehensibility scores during the pretest (2.503) and the posttest (2.550), as well as the difference in scores from one test to the other (-0.047). The following column under the heading of standard deviation indicates how far the data is from the mean score. As observed in the data from this column, the high scores point out that the data is spread out along the curve.

With 95% confidence, the true mean difference between the two groups fall between -0.373 and 0.279. This shows that there is not evidence to suggest that any of the mean scores is higher than the other, which means that they are the same. From this table the result of the t-test can also be observed.

The interpretation of the t-score, which will be used in order to reject or fail to reject the null hypothesis, is presented in the following figure.
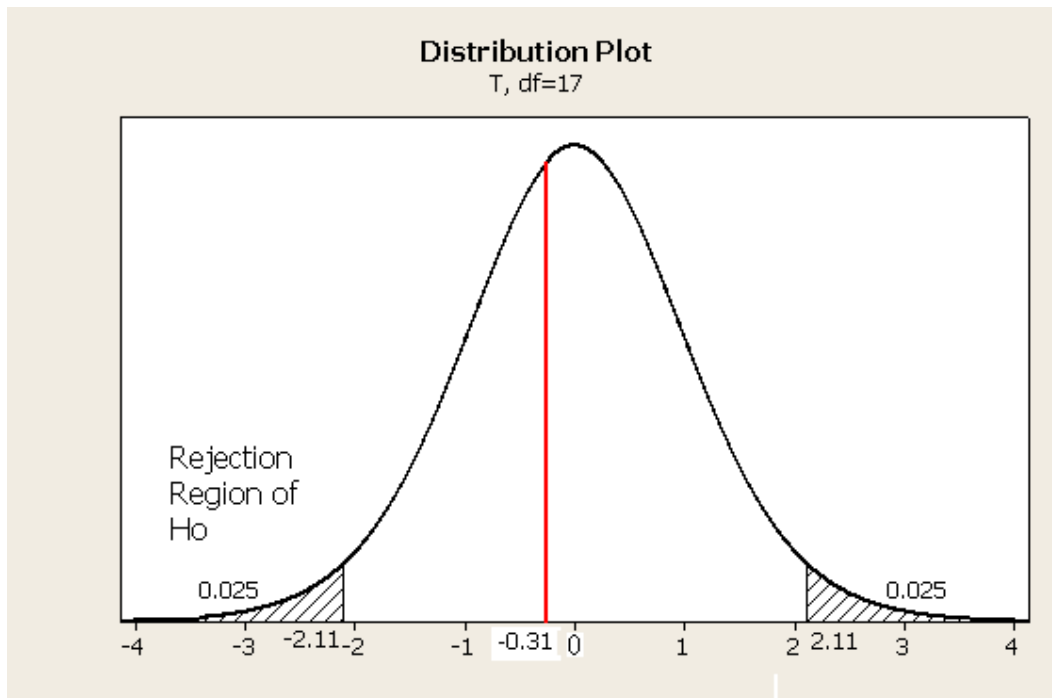
Figure 7- Distribution Plot of 2-tailed t-test Foreign Accent for the Control Group

Figure 7 shows the results of the statistical test carried out for the control group. With a degree of freedom of 17, we have a critical value of t of 2.11. Since the statistical test showed a value of -0.31, which falls outside the rejection region of Ho, the null hypothesis must be accepted. Statistically speaking, the mean accentedness scores obtained during the pre-test and the post-test are the same, which means that there was no improvement for the students of the control group.

4.4.3.2 Conclusion for Foreign Accent and Control Group

As shown in Table 20 and Figure 7, *the null hypothesis fails to be rejected*, which means that the mean foreign accent scores of the control group during the post test are the same as the scores obtained during the pretest. *In the case of the control group,, this is an expected result* because the students of the control group did not receive any type of pronunciation training.

4.4.4 Foreign Accent Scores for the Experimental Group

The scores obtained during the pre-test per speaker ranged from 1.25 (no foreign accent) to 3.38 (closer to 3 – strong foreign accent). The mean comprehensibility score for the pre-test was 2.40.

During the post-test, after receiving the explicit pronunciation instruction, the mean scores per speaker ranged from 1.75(close to 2- mild foreign accent) to 3.25 (strong foreign accent). Overall, the mean foreign accent score during the post-test was 2.54, indicating no improvement in foreign accent. However, the mean scores from the pretest and the posttest are not significantly apart from each other, there is a difference of 0.131.

In order to support the statement posed earlier, a paired t-test was carried out.

4.4.4.1 Statement of Null and Alternative Hypothesis

The hypotheses for the statistical test for the accentedness scores of the participants of the experimental group are the following:

Null *hypothesis*: there is no difference among pairs of measurements in the population (i.e., student scores will not differ from the pretest to the posttest). H_o: μ_{pre} - μ_{post} = 0

Alternative hypothesis: students will score higher on the pre-test than on the post-test. H_a: μ_{pre} - μ_{post} > 0

Since the use of the scale indicates that the higher the score the worse, if students from the experimental group obtain lower results during the post test (1- no foreign accent or 2-mild foreign accent), it will mean that they improved in terms of perceived foreign accent.

The results obtained after carrying out the paired t-test are presented in the table below.

	N	Mean	StDev
Pretest	16	2.408	0.591
Posttest	16	2.541	0.099
Difference	16	-0.1331	0.0969
95% lower bound for mean difference: -0.3030			
T_c= 2.11 (critical value for *t*)			
T_s = -1.37 (obtained t-score)			

Table 21 - Statistical Test and Confidence Interval for Mean Foreign Accent Scores of Experimental Group

Table 21 shows that the experimental group had a sample of 16 students. The second column presents the mean comprehensibility scores during the pretest (2.408) and the posttest (2.541), as well as the difference in scores from one test to the other (-0.1331). The following column under the heading of standard deviation indicates how far the data deviates from the mean score. As observed in the data from this column, the low scores point out that the data is close to the mean score, which means that almost all the participants of this group scored the same.

With 95% confidence, the true mean difference between the two groups fall above -0.3030. This shows that there is not evidence to state that any of the mean scores is higher than the other, which shows that there was not any improvement in terms of foreign accent.

The interpretation of the t-value, which will be used in order to reject or fail to reject the null hypothesis, is presented in the figure below.

Figure 8 shows the results of the statistical test carried out for the control group. With a degree of freedom of 15 and a one-tailed decision we have a critical value for t of 1.752. Since the statistical test showed a t-score of -1.37, which falls outside the rejection region of Ho, the null hypothesis is accepted. Statistically speaking, the mean accentedness scores during the pre-test and the post-test are the same, which leads us to the conclusion that there was no improvement in terms of accentedness for the speakers of the experimental group despite having received pronunciation training.
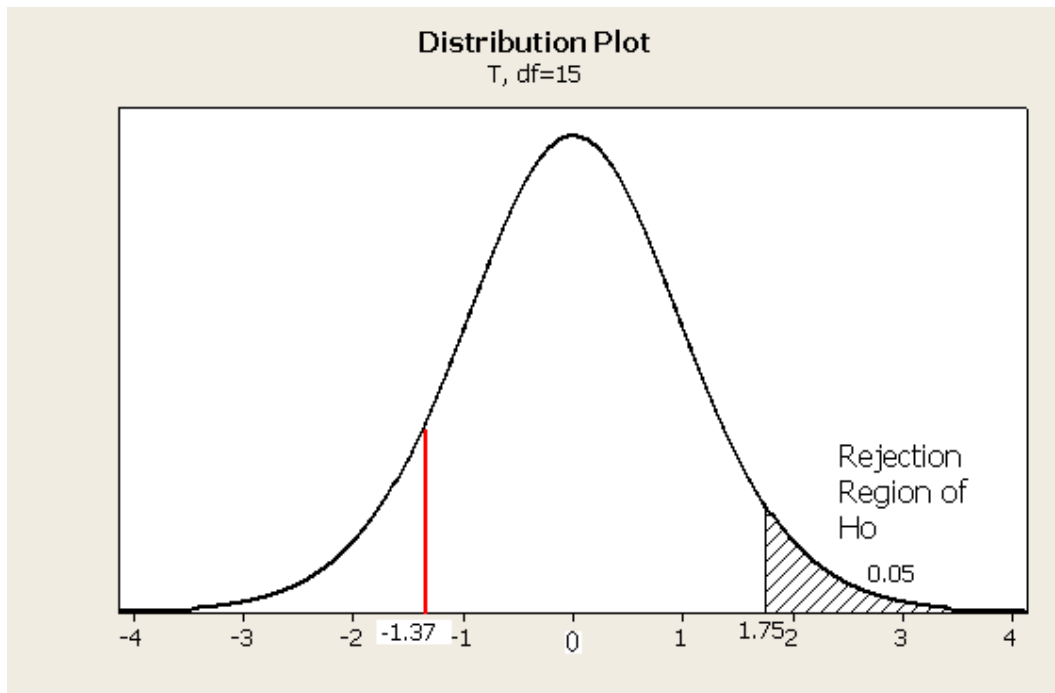
Figure 8- Distribution Plot of 1-tailed t-test foreign accent for the experimental group

4.4.4.2   Conclusion for Foreign Accent and Experimental Group

As shown in Table 21 and Figure 8, *the null hypothesis fails to be rejected*, which means that the mean foreign accent scores of the experimental group during the post test are not different from the scores obtained during the pretest, showing no improvement.

As observed from this analysis, neither the control nor the experimental group showed any improvement in terms of perceived foreign accent during the post-test. Like I mentioned earlier it was not a goal for my study to find such an improvement here. However, these results only support my idea of believing that Derwing et al (1998)'s participants showed an improvement due to the

constant input they received for living in a country where the target language is spoken.

Finally, the last section of this chapter will answer the third question of research. This section follows a similar format to the results presented for each of the dependent variables acknowledged as: intelligibility and comprehensibility.

4.5   Correlation Between the Dependent Variables

4.5.1 Statement of the Question/Problem

This section will show by an analysis of the data collected if there is a correlation between the dependent variables of comprehensibility and foreign accent. This analysis derives from the last research question of this study.

Does the degree of foreign accent affect the experimental and control group's comprehensibility?

For this question, the independent variable of time (pre-test and post-test) was not considered to be an important factor that would determine the relationship between foreign accent and comprehensibility. This question seeks support for the belief that a person with a strong foreign accent can be comprehensible. Therefore, a negative correlation between the degree of perceived comprehensibility and foreign accent is expected to be found. This

would be translated to speakers rated as being very easy to understand and rated as having a very strong foreign accent.

4.5.2 Relationship between Comprehensibility and Foreign Accent

As mentioned earlier, time was not considered an important factor that would help determine an existing correlation. Therefore, the mean scores of the pre-test and the post-test scores of comprehensibility and foreign accent of the control group were used to calculate the Pearson r coefficient yielding an r= 0.878, demonstrating a positive linear correlation between comprehensibility and foreign accent for this group. This means that when the speaker was easy to understand s/he was also rated as having no-foreign accent or mild foreign accent. Likewise, if the speaker was very difficult or impossible to understand (being graded as a 3- Very difficult to understand or 4-impossible to understand), it was likely they had received a similar score in the perception of foreign accent (3- strong and 4-very strong foreign accent).

Likewise, a linear correlation between the independent variables according to the mean comprehensibility and accentedness scores of the experimental group yielding an r= 0.834, was found. Once again, this demonstrates that there was a positive correlation among the variables; if the comprehensibility score improves so does the score related to foreign accent and vice versa.

Therefore, it can be concluded that there is a relationship between these variables; if the comprehensibility scores go up or down, so does the accentedness score. This translates into a high correlation, which does not

support the hypothesis I stated above where I suggested that there was a negative correlation between foreign accent and comprehensibility. As a consequence, my hypothesis is not supported by these results.

In sum, Chapter 4 has presented the most relevant findings yielded after analyzing the data obtained from this experiment. No improvement in terms of intelligibility or comprehensibility for the speakers of the experimental group during the post-test was found. However, regarding the last research question, a strong correlation between comprehensibility and accentedness was observed. In chapter 5, I will discuss the implications of these findings; I will also present a discussion relating these results to the ones obtained by Derwing et. al (1998).

CHAPTER V: DISCUSSION AND CONCLUSIONS

The final chapter presents an interpretation and discussion of the results described in Chapter 4 in reference to the hypotheses made at the beginning of this study. The discussion proceeds by analyzing each one of the dependent variables and its attainability after the pronunciation instruction. I analyze these variables first independently at the same time I will compare them to the study of Derwing, Munro and Wiebe (1998) and Munro and Derwing (1999).

In the current chapter I will also refer to some methodological concerns regarding the present study, as well as some suggestions for future research in this area. Finally, I will explain some implications of this research to language teaching.

5.1 General Overview

Two issues were central for this research project: the teachability of pronunciation along with its effects in the improvement of intelligibility and comprehensibility, and the correlation existing between comprehensibility and foreign accent of Spanish speakers in an EFL context. The purpose of carrying out this study in an EFL context intended to show that Derwing, Munro and Wiebe's (1998) study would be backed up by having similar results of improvement in comprehensibility and intelligibility after explicit pronunciation instruction. It is for these reasons that the research questions of the current study were stated as follows:

1. *Will students from the experimental group be more intelligible at time 2 than at time 1 compared to students from the control group?*

This first question was very optimistic by giving a lot of credit to the pronunciation instruction that was about to be delivered to the students of the experimental group. Since both groups had the same instructor and were exposed for the same amount of time to the target language, an improvement in terms of intelligibility was expected as a result of the explicit pronunciation training given to the experimental group. However, according to the results presented in Chapter 4, no improvement was found in intelligibility for the students of the experimental group during the post-test.

The same expectation was anticipated for the improvement of comprehensibility with the following research question:

2. *Will students from the experimental group be more comprehensible at time 2 than at time 1 compared to the students from the control group?*

Likewise, students from the experimental group did not show any improvement in terms of comprehensibility after receiving explicit pronunciation training.

Finally, with this project I expected to find no correlation between the speakers' comprehensibility and their perceived foreign accent. It has been my belief, that it does not matter how strong a person's foreign accent is, this would not detrimentally affect the speaker's comprehensibility. In order to find support for this idea, the following question was posed:

3. *Does the degree of foreign accent affect the experimental and control groups' comprehensibility?*

Regarding the third question, although it was not expected to find a correlation between comprehensibility and perceived foreign accent, a positive correlation was found. The latter means that when speakers were found comprehensible, they were also perceived as having a mild foreign accent and vice versa. In the following sections I will discuss the answers more deeply.

5.2 Pronunciation Instruction

This section presents the interpretation of the results obtained from the students of the experimental group after receiving pronunciation training. Also, it compares the intelligibility and comprehensibility scores of the experimental group to those of the students from the control group.

5.2.1 Improvement on Intelligibility

As mentioned previously, an improvement in terms of intelligibility in the students from the experimental group from the pretest to the posttest was expected to be seen. This group of students was the group which received the explicit pronunciation instruction. The instruction they received lasted 12 weeks and it included segmental and suprasegmental features of the sound system of English. The way this dependent variable was measured was by the orthographic transcriptions made by 8 NESs.

According to the results presented in chapter 4, *there was no improvement* in terms of *intelligibility* for the speakers of the *experimental group* nor for the participants in the *control group*. In the case of the students from the *control group*, with an obtained t-value of 2.48 which is higher to the critical

value for t (2.11) was stated that there was statistical significance to say that the intelligibility scores during the pretest and the posttest were not the same. They were not better either, which leaves one option: they were lower. This can be noticed from the mean intelligibility scores of the students of the control group obtained during the pretest and the posttest: 86.82 and 69.43 respectively.

Although, there is a difference of 1.21 points on the mean intelligibility scores from the pretest (82.23) to the posttest (81.02) of the students from *the experimental group*, these are not significant to reject the null hypothesis and accept the alternative hypothesis. The latter stated that the mean intelligibility scores obtained during the posttest would be higher than those of the pretest. As a result, *the participants from the experimental group did not show a better performance during the posttest, which reflects no improvement.*

Despite the fact that there was no improvement in terms of intelligibility for the speakers of this study, it can be said that the students' intelligibility was acceptable and they could be able to communicate with other NESs. This is stated after observing that around 80 % of the utterances spoken by the Spanish speakers were rated intelligible (79.04).

In conclusion, it cannot be claimed that there was any improvement in terms of intelligibility for the speakers of the control group. Most importantly, there was no improvement of the dependent variable for the speakers of the experimental group, something that was expected due to the fact that this group of students received explicit pronunciation training over a period of 12 weeks.

5.2.2 Improvement on Comprehensibility

As opposed to Derwing, et al. (1998)'s study there was n*o improvement in terms of comprehensibility* for *neither the control* nor *the experimental group.* Although no improvement was expected in terms of comprehensibility for the control group, it was important for me to see if they improved even when no explicit pronunciation instruction was delivered to them.

As a reminder to the reader, due to the values given to the scales used to rate foreign accent and comprehensibility, the lower the score obtained from the ratings the better. Therefore, it is expected to see lower scores (between 1 and 2) during the post-test and higher scores during the pre-test (3 and 4).

After carrying out a Paired t-test (-1.86>-2.11),it could be said that the students from the *control group* did not obtain similar results on comprehensibility during the pretest and posttest according to the ratings obtained from NESs. This cannot be translated though as finding an improvement in terms of comprehensibility. On this note, the mean score obtained during the pretest was 1.764, whereas during the posttest was 2.229, which indicates that they were slightly better at the beginning of the semester and got a little worse by the end of it.

Likewise, the *experimental group* students' comprehensibility scores were not affected by the pronunciation instruction. According to the results presented in Chapter 4, the difference of the scores in terms of comprehensibility from the pretest (1.796) to the posttest (1.977) was not statistically significant. Although the mean score from the posttest is higher than the one from the pretest, due to the organization of the scale (1- very easy

to understand, 4- impossible to understand), the higher the score, the less comprehensible.

Scale	Control	Experimental
Pre-test	1.764	1.766
Post-test	2.229	1.977
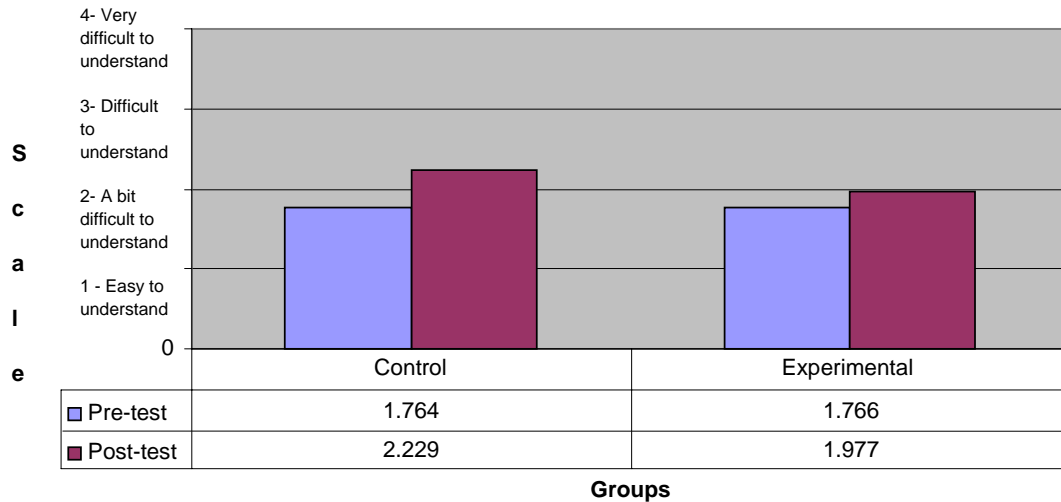
Groups

Figure 9- Mean Comprehensibility Scores for the Pretest and the Post test for the Experimental and Control Group.

As can be seen from Figure 9, the mean comprehensibility scores presented as the nonnative stimuli were found to be very comprehensible; the comprehensibility scores were rated to be between 'easy to understand' and 'a bit difficult to understand' (1 and 2, respectively). From this observation I found that the speakers from the control group were slightly better in terms of comprehensibility (1.764) from the beginning of the experiment than the students from the experimental group (1.766). During the post-test the students from the control group obtained the highest scores (2.229) between these two groups, indicating a poor performance. In addition, the students from the experimental group also obtained high scores (1.977), but not as high as the scores obtained from the students from the control group, which means that the

students from the control group performed worse than the ones from the experimental group.

Despite the fact that the experimental group did not show any improvement in terms of comprehensibility during the post test, it can possibly be argued that the pronunciation instruction they received helped them from obtaining even higher scores during the posttest. Likewise, it can be argued that the students from the control group obtained much higher scores, which translates on a worsening of comprehensibility, on the posttest than on the pretest due to the lack of pronunciation training.

5.2.3 Improvement of Foreign Accent

Although looking at the reduction of foreign accent in the utterances produced by the participants of this study was not the aim of this study, it needs to be addressed in order to compare the current results to those obtained by Derwing et al. (1998)'s study. According to their study, the three groups with whom they worked (the segmental, suprasegmental and no-instruction approach) showed an improvement in terms of perceived foreign accent. However, the group which received the segmental approach was significantly less accented during the posttest (Derwing et al., 1998). One of the arguments that favor this improvement could be the amount of exposure to the target language. It is important to highlight the fact that the participants from Derwing et al. (1998)'s study were living in Canada, a country which official languages are English and French. Therefore, the ESL learners had to be in contact with other NESs. Perhaps this contact was not characterized by a face-to-face interaction but by

the mass media like television, radio, and advertisements in the target language. Also, these were students who received the pronunciation training over a period of 12 weeks, just like the participants of the current study, but the former group received 100-minutes of pronunciation training per week, while the participants of this study received just 20 minutes per week. After taking all these issues in consideration, the interpretation of the results in terms of foreign accent will be discussed. The scale based on for the rating of this variable was similar to the one used for the rating of foreign accent (1- No foreign accent, 2-mild foreign accent, 3-strong foreign accent, 4-Very strong foreign accent).

Overall, as shown by Figure 15, the mean foreign accent score for both groups was 2.5, which places it between the 'mild foreign accent' and 'strong foreign accent' categories.
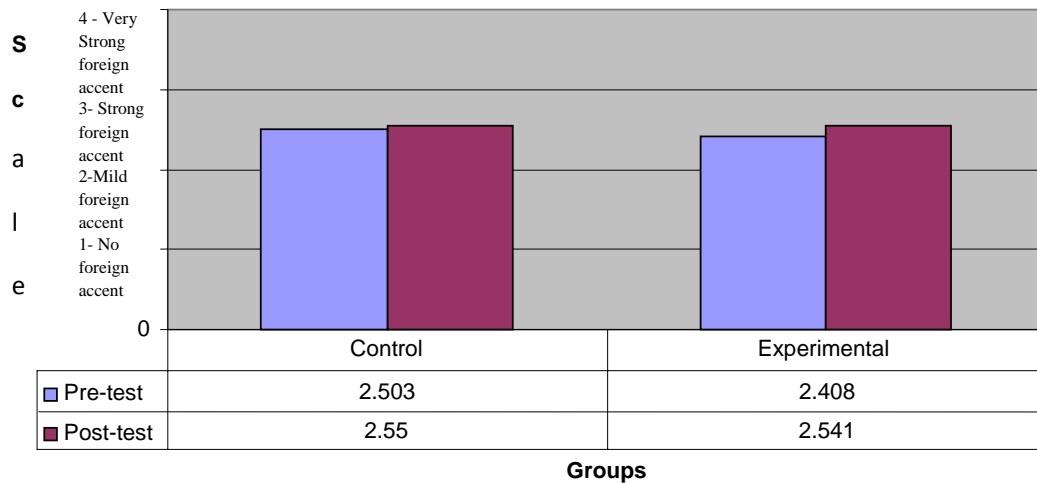

	Control	Experimental
Pre-test	2.503	2.408
Post-test	2.55	2.541

Groups

Figure10 - Mean Foreign Accent Scores for the Pretest and the Post test for the Experimental and Control Group

In the specific case of the control group, a reduction for foreign accent was not expected due to the lack of pronunciation instruction. According to chapter 4, the results were not statistically significant to reject the null hypothesis. This means that the perceived foreign accent during the pretest and the posttest were perceived by the NESs as the same. The fact that the participants of the control group from Derwing, et al. (1998)'s study showed an improvement in terms of foreign accent and the participants in the current study did not, I attribute to context: ESL vs. EFL, especially to the amount of time of exposure to the target language, a limitation I will address shortly.

With similar results, the participants from the experimental group did not show any improvement in foreign accent from the pretest to the posttest after receiving explicit pronunciation training. The null hypothesis, which stated that the mean difference between the mean scores of the pretest and the posttest were the same, failed to be rejected.

For this reason, it can be concluded that there was no improvement in terms of foreign accent for the speakers of the experimental group after 12 weeks of explicit pronunciation instruction. These findings contradict the idea that foreign accent can be reduced after explicit pronunciation instruction, as suggested by the results found in Derwing, et al. (1998)'s study.

5.2.4 Correlation between Comprehensibility and Foreign Accent

According to the results from Chapter 4, a linear positive correlation between the dependent variables of comprehensibility and foreign accent was found. This can be translated into a relationship between them, which means

that if the speaker's comprehensibility was rated as 'a bit difficult to understand' (obtaining a 2), they were likely to obtain a 'mild foreign accent' rating (also obtaining a 2).

As I mentioned earlier, I was not expecting to find a correlation between these variables. Believing that a strong foreign accent could not affect someone's comprehensibility is a hypothesis that grew in me after observing empirically that most of my students were comprehensible even when they did not have a native-like pronunciation. However, this was not a belief that has always governed my thinking; I used to believe the opposite. Therefore, observing that there is, according to my results, a correlation between these variables pulls me back to my original beliefs. I am not saying that I disregard the idea that motivated me to carry out this study (i.e, that there is no correlation), but it does leave room to support the theory that foreign accent and comprehensibility are related to one another.

On this note, this finding reveals that even when we might think that the correlation is positive, causality cannot be shown from this correlational study. In order to determine if comprehensibility affects foreign accent of vice versa, an experimental design showing causality should be carried out

These results confirm Munro and Derwing (1999)'s study, where a stronger correlation between comprehensibility and foreign accent for extemporaneous speech rather than for intelligibility and perceived comprehensibility, was found.

Due to the unexpectedness of my results I find it important to address some methodological concerns that should be borne in mind for further

research. The following section describes concerns related to the participants (speakers 5.2.5.1 and listeners 5.2.5.1.1) of the current study, time constraints and exposure to the target language (5.2.5.2).

5.2.5 Methodological Concerns

What should be the focus on pronunciation instruction in order to make a difference in the students' production of the target language? What should be the level of these students in order to notice an improvement? These are some of the questions I ask myself after analyzing and interpreting the data of this study. As seen from the interpretation of the results presented above, there was no improvement in terms of intelligibility, comprehensibility or foreign accent in the students from the experimental group. Throughout this section, I present the methodological concerns, which, in my opinion, should be taken into account for this study to be replicated.

5.2.5.1 Choosing the Right Sample: Speakers

One of the limitations of this study was the selection of the participants. It must be said that the reason I decided to work with students with a high-intermediate level of proficiency in English, was because they were the ones available. As a language professor of the university in which this experiment took place, I had knowledge of the curriculum of the course in which the pronunciation component was included. By experience, I was aware the professors of this course (ID102), must cover set content per week. Even though this time

constraint would have also affected my class, I had the experience of teaching ID102 before with the pronunciation component included. The latter took place during the summer period of 2008, in which the pilot study of this research took place.

In addition, it was important for the purpose of this study to have control of the presence or lack of the pronunciation component. By deciding to work with two of my classes I was able to present explicit pronunciation instruction to the students from the experimental group and avoided doing so with the students from the control group.

Since the students from both groups performed very well by obtaining relatively high scores on intelligibility and comprehensibility in the pretest, the improvement (if any) could not have been expected to be significant. The ideal situation for this study would have been that in which the students obtained lower scores in each of the dependent variables in order to observe improvement (if any). It is for this reason that for future work in this area, I suggest choosing a sample of students with a lower level of proficiency in English.

Thus, according to the questionnaire applied to these students at the beginning of the course, roughly 80% affirmed having started to study English before the age of 13 (see Figure 11 below), which according to the Critical Period Hypothesis (in its strongest version) is the ideal age to learn a foreign language with a lower trace of foreign accent (Flynn, 1988). This could be attributed as another factor that determined the high level of English of these participants. Therefore, I suggest choosing a sample of people who started to study English at a later age in their lives, ensuring the possibility of actually

instructing them in pronunciation and observing an improvement. Thus, pronunciation instruction can neither be regarded nor discounted as having an effect in terms of improvement on intelligibility and comprehensibility. Further work needs to be done in this area where the participants fulfill the characteristics above mentioned.
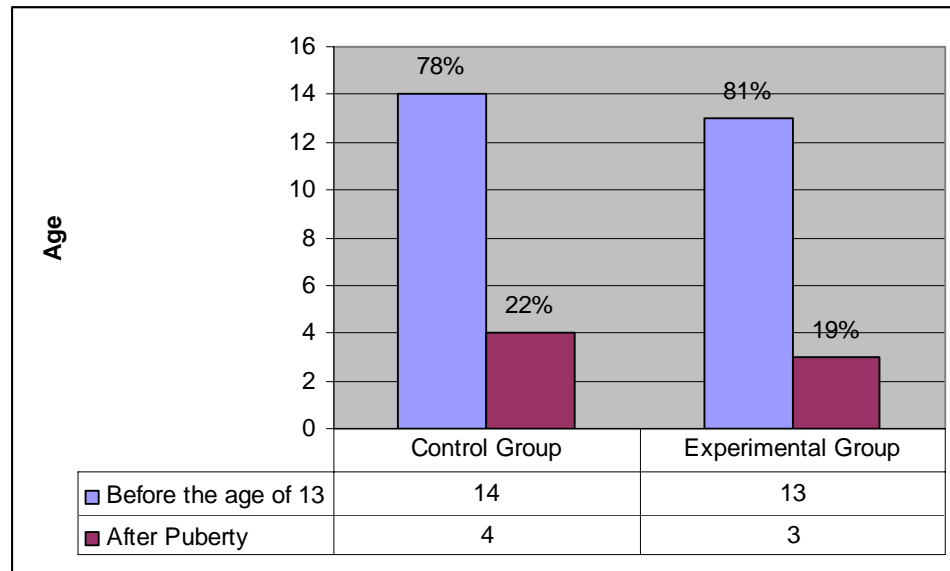
Figure 11 – Age at which Students started to study English as a Foreign Language

5.2.5.1.1 Choosing the Right Sample: Listeners

The availability of listener-raters also played a determining part in the carrying out of this research project. Derwing, et al. (1998)'s study involved 48 NESs, whereas the current study was comprised of 8. From the beginning of the study, it was acknowledged that finding NESs to complete the second part of this experiment was going to be a difficult task for several reasons. Principally, it was necessary to procure raters who shared certain characteristics with the

Pronunciation Instruction

participants of Derwing, et al. (1998)'s study.   These characteristics included US American students who had limited exposure to Spanish speakers: the less contact with other native Spanish speakers, the better. By having little contact with Native Spanish speakers there is a possibility they may have not been acquainted with Spanish accents in English. Also, the raters would have to be living in a Spanish-speaking country for the first time and had not taken more than 3 courses of Spanish.   Most of the raters of this study, however, had previously lived in a Spanish-speaking country or were taking their 3rd or 4th

Despite the listener-raters' exposure to Spanish-accented English, I suggest considering another population for carrying out the transcription task, such as one with a lower level of proficiency in Spanish or better yet, one whose native language is other than Spanish, such as the study carried out by Bent and Bradlow (2003). Their study was comprised of native talkers of Chinese, Korean and English, who were recorded reading simple English sentences. Later, native listeners of English, Chinese, Korean and a group of various native language backgrounds carried out an intelligibility recognition task with the recordings of all the talkers. Bent and Bradlow(2003) observed that NNESs were perceived as intelligible as other NESs by listeners who shared the Non-native speaker L1, but also that they were perceived as intelligible by those listeners who did not share the same language background. For example, Chinese speakers were perceived as intelligible as NESs by Chine listeners but also by Korean Listeners.

Concerning the orthographic transcriptions presented in Chapter 4, the results indicated that on several occasions the listener-raters transcribed verbs and prepositions that were not uttered by the speakers. Upon studying some of

these orthographic transcriptions it can be argued the fact that the NESs tended to infer the words they did not understand by paying attention to the context or the environment in which the word was expressed. In some cases, transcribers tended to fill in the correct forms, which was the case of some grammar post-hoc corrections. An example of this situation happened with the following expression uttered by a speaker:

(1) *"My sister is married, she have one son"*

This expression was transcribed as "My sister is married, she has one son" by 6 of the 8 listener-raters. As we know, the verb 'to have' needs to be conjugated in the third person singular (she); therefore, the grammatically acceptable utterance should have been "she has one son". This can become problematic if we are relying on the fact that NESs would transcribe only what they hear because the listeners were not transcribing what they heard but what they thought they heard according to the context. For this reason if someone tries to duplicate the present study, I would recommend to be very cautious in choosing NESs for the performance of this task. They necessarily would have to be people who are not in constant contact with other Spanish speakers or people who have just arrived from their place of origin. On this regard, it should be ideal to have a homogenous group of listeners, with the same background and amount of exposure to Spanish. On the other hand, I would also recommend that the listener-raters should be given more training in the transcription task, since 15 minutes of training could not possibly prepare the listener-raters enough for the carrying out of transcriptions.

Furthermore, it would yield more interesting results if the transcriptions were made by other NNESs, such as the model proposed by Jenkins (2000) and the mutual intelligibility model researched by Munro, Derwing, and Morton (2006). This would be interesting in the sense that we could observe the degree of intelligibility of these speakers from other NNESs. Like I mentioned in chapter 2, English is spoken by one quarter of the world population (Crystal, 2007), where the number of speakers of EFL is the same as the sum of L1 and L2 speakers altogether (Crystal, 2007). This leaves me with the impression that studies where mutual intelligibility takes place should be carried out.

5.2.5.2   Time Constraints and Amount of Exposure to the Target Language

It is imperative to mention that another important limitation for this study regards time and the amount of exposure to the target language. As mentioned earlier, the participants from the Derwing, et al. (1998)'s study were exposed to the pronunciation component over a period of 12 weeks and 100 minutes per week, whereas the students of the current study were exposed to only 20 minutes per week over the same period of time. Furthermore, the original study took place in an English-speaking country, whereas the present study was carried out in a country where English is spoken as a foreign language.

The amount of pronunciation instruction to which the participants are exposed is inherent to the context in which this research is carried out. In an English-speaking country, the language learning process takes place in a full

immersion program of the learning of the target language; these programs include a 20 hours-per week exposure to it. Besides, the students are exposed to the language on a daily basis. As a consequence, there are no limitations for the ESL teachers to dedicate a set amount of time to the pronunciation component. The amount of time given to the pronunciation component could not be handled the same way in this study. As an EFL class, English is taught 3 times a week for 50 minutes each class, which is not even half of the time to which the ESL learners were exposed. If we take this into account and the fact that it is necessary to cover certain content, grammar structures, reading and writing abilities in the course, it leaves little room to teach something extra. Even though pronunciation should be a component of the formal curriculum of ID102, this is not evaluated formally; neither teachers nor students or course designers give it great importance.

One of my suggestions to duplicate this study would be to give its own space to the teaching of pronunciation. During the same period of data collection I worked in a workshop of pronunciation with 3 students within the same university. With a 60-minute class, I was able to give the proper amount of time to each of the stages suggested by Celce-Murcia, et al. (1996) which are: listening discrimination, controlled practice, guided practice, and communicative practice. As a consequence, we were able to go through the segmental and suprasegmental features in depth. There was enough time to practice without any of us thinking that we had to speed the presentation up so they could go to another class, which was the case of the students from the experimental group. Although these students were not recorded, an improvement in their pronunciation was noticeable, especially in the production

of certain segments, which was their concern and the reason they joined the workshop.

Similarly, after working with a female from the Intensive English Pronunciation Program (IEP) at a university in the US over a period of 11 weeks and 60 to 80 minutes per week, an improvement in pronunciation was found. The major improvement was noticeable in her production of consonants, which were identified as the segmental features that caused her problems in communicating with other NESs. This was noticeable after running a pretest and a posttest between the pronunciation training. In spite of her problems in the production of certain consonants during the posttest (e.g. /m/, /n/ and /ng/ at the end of words), consonants which were practiced and highlighted over 11 weeks, it was acknowledged that the purpose of pronunciation training was to make her aware of certain features that are important to recognize about the target language that is being studied, and not to produce them perfectly.

In order to conclude this section on pronunciation training and the amount of exposure to the target language, drawing from the results of this study, the 1998 study, and my previous professional experience, I consider it imperative in both ESL and EFL contexs, to dedicate a special time to pronunciation in order to make a difference.

5.3 Concluding Remarks and Future Work

Throughout this thesis project, it has been stated that pronunciation should play an important role in the curriculum of any course that focuses on the teaching of a foreign language, especially the teaching of English. Although the results of

this study do not support the fact that pronunciation training has an important role in the improvement of intelligibility and comprehensibility, based on the amount of time given to pronunciation training in studies such as Derwing et. al (1998), it is clear that the instruction by itself could prove the contrary. There are several factors such as time and the characteristics of the students, which can help enhance this result. Observing an improvement is not about manipulating the variables in order to improve results, but the consideration of a suitable environment that can prove the efficacy of pronunciation training in favor of improving intelligibility and comprehensibility of NNESs.

Regarding the role that pronunciation should play in the classroom, I consider it important not to overlook it. Just like the learning of other aspects of the language such as syntax, grammar and vocabulary, language learners need to be aware of their production of the target language. This feature of the language may not seem as important for teachers as it is for language learners. According to Derwing (2003), people tend to hold biases against people with accented speech and for this reason some learners desire to leave no mark of their origin, which would be noticeable through their accented English.

Although Derwing (2003)'s affirmations are true for the majority of ESL learners, we cannot assume that this is not the case for EFL learners. Despite the fact that I did not carry out a formal research on attitudes toward the learners' pronunciation concerns, I could identify that the same idea expressed by Derwing (2003) also applies to some EFL speakers from my study through informal conversations. The students who participated in the pronunciation workshop stated that having a good pronunciation gives a higher social status to the person who speaks it; it is synonymous with *well-educated.*

Not very surprisingly, the majority of the pronunciation workshop participants were only concerned about the production of segmental features and that is what they expected to be taught. All of them affirmed never having heard about intonation, rhythm, word and sentence stress as important components to the improvement of pronunciation. I would like to make clear that a pronunciation component within the curriculum, should not aim for a native-like pronunciation. It may not even be expected for English learners to produce phonemes such as the voiceless 'th' perfectly (Jenkins, 2002) but only to make the students aware of the main components that make English different from their mother tongue and can cause intelligibility problems with other NNESs.

At this point, I consider important for the reader to take into account the fact that the number NNESs has overcome the number of NESs (Crystal, 2007). For this reason English learners must realize that they are no required to attain a native-like pronunciation, since this characteristic does not equal to intelligibility (Jenkins, 2000), but only to be intelligible. According to the Lingua Franca Core proposed by Jenkins (2002) language professors teaching pronunciation should re-direct their attention to the aspects of the phonology of English that are more likely to cause intelligibility problems among different L1 speakers of English.

As a follow-up of this study, I will analyze the improvement in terms of intelligibility and comprehensibility after explicit pronunciation instruction from the NNESs point of view. It will be the objective of this study to find out if there is any improvement after explicit pronunciation instruction. The listener-raters of this research project will have to be comprised by other Spanish speakers with a medium to high level of proficiency in English. Spanish speakers working as

listeners will have to rate for comprehensibility and carry out transcriptions for intelligibility. By doing this, I will follow Jenkin's model of mutual intelligibility in the sense that I will study how intelligible are NNESs to other NNESs since the interaction among NNESs will be present more frequently.

Finally, although the results presented in this thesis project do not shed light in favor of the improvement of intelligibility and comprehensibility after explicit pronunciation instruction, these findings are not conclusive. More research needs to be done in this area, with samples with different characteristics, including other Non-Native English speakers. Meanwhile, pronunciation instruction should continue to be included as an important component in the learning of a foreign language. Knowing how to pronounce the language we are learning gives us confidence and motivates us to do better. Language professors should realize that grammar, writing and reading abilities are important, but no more important than pronunciation. The ability to express our ideas and communicate with other people as intelligibly and comprehensibly as possible is why we decide to study a foreign language in the first place.

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APPENDIX A. Sample class focusing on the teaching of the voiced and voiceless sound of theta.

/ θ/ VS. / ð/

Objectives:

- To recognize the manner of articulation of the voiced and voiles sounds of theta.
- To practice and improve the production of the sound / θ / in initial position followed by a vowel.
- To practice and improve the production of the sound / θ / when followed by a consonant.
- To practice and improve the production of the sound / θ / in the middle of words.
- To identify the difference between / θ / and / ð / by the use of minimal pairs.
- To correctly identified and produce both sounds in unplanned conversation.

Material:

Copies of exercises from the following resources:

a) Lane, L. (1993). *Focus on Pronunciation. Principles and Practice for Effective communication.* Colombia University. (pp. 62-64)

b) Hewings, M., Goldstein, S. (1998). *Pronunciation plus- (student's book).* Cambridge University Press. (pp. 24-27)

Activities:

1) Teacher (T) shows students (ss) a diagram which represents the human head, seen from the side (Celce-Murcia, et al., 1996, p. 43). The purpose is to get ss acquainted with the articulators that it will be referring to throughout the sessions.

2) T shows the visual for the representations of the 'th' sound in the IPA.

3) T shows the manner and place of articulation of the voiced and voiceless sound of theta. T stresses the differences between voiced and voiceless by placing her hand in front of her mouth in order to feel the aspiration. Ss practice the sounds along with T.

4) Input / receptive skills. T and ss go through the first activity from Lane (1993, p. 62). They notice the / θ / sound in initial, middle and final position. Ss will utter the words and will be corrected only if needed.

5) The same procedure for the / ð / sound.

6) Idioms and expressions are introduced. They are read by ss and they are encouraged to come up with a sentence. Ss will use the idioms on the exercise provided below (Lane 1993, p.62)

7) T presents a new list of words (Hewings 1998, p.25) which contain the target sounds. Ss are encouraged to make up a story by trying to use those words as well as the idioms that were revised.

8) Homework: from Hewings pages 26-27.

APPENDIX B . Transcription Conventions

/ /   / /   tone unit boundaries

UPPERCASE   prominent syllables indicating stressed or salient words

UPPERCASE   tonic syllable carrying the tone choice or tonal pitch

                      movements associated with the tone unit

↘   falling tone associated with the tonic syllable, indicating that

                      the content of the tone unit is in some way world-changing

                      to the hearer

↗   rising tone associated with the tonic syllable, indicating that

                      the content of tone unit aggress in some way with the

                      current world view of the hearer

→   level tone associated with the tonic syllable, indicating that

                      the content of the tone unit is presented as a language

                      specimen

…   omission of remainder of tone unit

Pickering, L. (2001). The role of tone choice in improving ITA's communication

in the classroom, *TESOL Quarterly, 35* (2), pp. 236, 237.

APPENDIX C. Questionnaires for Speakers

Bio-data questionnaire applied to experimental and control group.

Nombre: _____ Edad:_____

   Contesta brevemente las siguientes preguntas.

1. ¿Cuántos años tenías cuando empezaste a estudiar Inglés?
   _____

2. ¿Cuánto tiempo tienes estudiando Inglés?
   _____

3. ¿Alguna vez has visitado un país donde el idioma nativo sea el inglés?
   SI   NO
   3.1¿Dónde?_____

   3.2¿Por cuánto tiempo? _____

   3.3¿con qué propósito? (vacaciones, estudios,
   etc.)_____

4. ¿Cómo calificas tu habilidad en inglés en los siguientes aspectos?

	Excelente	Muy Bien	Bien	Regular	Deficiente
a. Pronunciación					
b. Escritura					
c. Lectura					
d. Comprensión Auditiva					

5. ¿Cuánto tiempo dedicas a las siguientes actividades **a la semana**?

   a. Ver TV en Inglés (películas, series de televisión, etc.) _____hrs.
      a la semana.
   b. Escuchar Inglés (música, radio, hablantes nativos, radio) _____
      hrs. a la semana.
   c. Hablar en inglés (contigo mismo, otros hablantes, clases,
      maestros) _____ hrs. a la semana.
   d. Leer en inglés (revistas, libros, Internet) _____ hrs. a la
      semana.

    e. Escribir en Inglés (tarea, chat, etc.) _____ hrs. a la semana.

6. ¿Cuánto tiempo dedicas al estudio del Inglés? _____ hrs. a la semana.

7. Selecciona dentro de las siguientes opciones aquellas que mejor se apeguen a las razones por las cuales estudias Inglés.
   a. _____ requisito escolar
   b. _____ lo necesito para mi trabajo
   c. _____ para practicarlo con mis amigos nativo hablantes del Inglés
   d. _____ para practicarlo con mis amigos no nativo hablantes del Inglés
   e. _____ para viajar
   f. _____ otros (mencione) _____

APPENDIX D - Questionnaire for Listener-Raters

Name: _____ Age: _____

Course: _____.

Please answer the following questions or underline the appropriate answer.

1.   My first language is:

      US American English - British English - French - Other:_____

2.   Do you have Spanish heritage?   Yes   No

3.   Do you speak Spanish?   Yes   No

4.   I qualify my proficiency of Spanish as:

      Beginner   Pre-intermediate   Intermediate Advanced   Native-like

5.   I have taken _____ Spanish classes during my college education

      1   2   3   4 or more

6.   In my home country I usually spend

      _____ hrs. a week listening to Spanish music

      _____hrs. a week watching T.V. or watching movies in Spanish

      _____hrs. a week reading Spanish magazines/articles

      _____hrs. a week writing papers, letters in Spanish

7. In my home country I spend…

      _____hrs. a week practicing Spanish with Native Spanish speakers

      _____ hrs. a week practicing Spanish with Non-native Spanish speakers

APPENDIX E: Controlled reading.

Have you observed the ways people from different cultures use silence? Have you noticed that some people interrupt conversations more than other people? All cultures do not have the same rules governing these areas of communication. Many Americans interpret silence in conversation to mean disapproval, disagreement, or unsuccessful communication. They often try to fill silence by saying something even if they have nothing to say! On the other hand, Americans don't appreciate a person who dominates a conversation. Knowing when to take turns in a conversation in another language can sometimes cause difficulty.

Should you wait until someone has finished a sentence before contributing to a discussion? Or can you break into the middle of someone's sentence? Interrupting someone who is speaking is considered rude in the United States. Even children are taught explicitly not to interrupt.

From Deena R. Levine and Mara B. Adelman, *Beyond Language: Intercultural Communication for English as a Second Language* (Englewood Cliffs, N.J.: Prentice-Hall, 1982), p. 23.

APPENDIX F. Prompts for Extemporaneous Speech

Topic # 1 – **Talk about you and your interests** . What do you study? Why? What do you do in your free time? What things do you like /enjoy and hate doing? Do you play/like any sports? Which ones? Describe a regular day in your life. Favorite music/singer/actor/movie, etc

Topic #2 – **Talk about your family**. Where are you /they from? How many are you? What do they do? How many siblings, sons, and daughters you have? What do you do together? What did you do during your last vacations?

APPENDIX G – Likert-scale for comprehensibility rating

1	Easy to understand	The speaker is easy to understand. Complete understanding (without difficulty) of ideas. Errors never distract listeners' attention or cause confusion about meaning. Speech is well organized; information is plausible and precise and is presented logically and with appropriate transitions. Any native speaker listener should be able to understand all of the response without problem.
2	A bit difficult to understand	The speaker can be understood throughout, though mispronunciation may occasionally cause momentary strain for the listener. Understanding of the majority of ideas Errors occasionally distract listeners' attention or cause confusion about meaning. Speech is organized; information is generally plausible and precise and is presented logically and with appropriate transitions listener may have to re-listen the speech in order to understand better.
3	Very difficult to understand	Difficult to understand. Speech is often unintelligible. Little understanding of main ideas. Errors are often distracting to listeners and cause confusion about meaning. Speech may be insufficient and present poorly organized or disorganized information; choice of words may be imprecise or inaccurate. listener should be able to comprehend most of the response but some sections may be more difficult to interpret.

4	**Impossible to understand**	The speaker cannot be understood at all.
		The speaker has little communicative output.
		Numerous and serious problems distract listeners and cause confusion about meaning; may be incoherent in places.
		Amount of speech is minimal; information may be irrelevant or inaccurate.
		Responses almost impossible to understand as spoken.
		Responses require the listener to "figure out" what the speaker is trying to say.

APPENDIX H – Intelligibility Rating Format

Universidad de las Américas, Puebla

Departamento de Lingüística Aplicada

Listener's name: _____

Nationality: _____

Listen carefully to the sample and transcribe exactly what you will hear. Then decide on the value from the scale that best describes the sample's comprehensibility.

Participant's number	Orthographic Transcription	Score for comprehensibility 1-4
1		
2		
3		
4		
5		
6		
7		

APPENDIX I- Likert-scale for Foreign Accent rating

1	No foreign accent	The speaker sounds native-like; there is no sign of foreign accent.
		Pronunciation and enunciation are very clear.
		Speaks native-like fluently.
		The speech demonstrates ease and comfort with the language and any pausing is natural.
2	Mild foreign accent	There is a perceivable degree of foreign accent.
		Speaks with almost or near native-like fluency. Speaks with occasional hesitation; any hesitations do not interfere with communication.
		The pronunciation and enunciation are clear
		The volume is not too low or too loud.
		The rate is not too fast or too slow. Pauses are not too long or at inappropriate spots.
3	Strong foreign accent	The speaker has a strong accent that distracts moderately the listener.
		Show some inaccuracies and/or interference from the native language, which is reflected in the production of sounds that resemble to the orthographical transcription of the Spanish alphabet, E.g. small (a for o), scoop (o for u).
		Speech is influenced by first language.
		The pronunciation and enunciation are unclear.

		Difficulties understanding the words in the message. Listener has to work to understand the words.
		The listener gets distracted by problems in the delivery of the message.
4	**Very strong foreign accent**	The speaker has a very strong foreign accent.
		There is a strong presence of L1 interference that is very distractive for the listener.
		The pronunciation and enunciation are so unclear that the listener cannot understand most of the message.
		Speech is so strongly influenced by first language that message is often incomprehensible
		The volume and rate are is so low/fast that you cannot understand most of the message.