

Florida State University Libraries

Electronic Theses, Treatises and Dissertations

The Graduate School

2012

The Influence of Turkish Sound System on English Pronunciation

Miray Varol



THE FLORIDA STATE UNIVERSITY
COLLEGE OF EDUCATION

THE INFLUENCE OF TURKISH SOUND SYSTEM ON ENGLISH PRONUNCIATION

By

MIRAY VAROL

A Thesis submitted to the
School of Teacher Education
in partial fulfillment of the
requirements for the degree of
Master of Science

Degree Awarded:
Fall Semester, 2012

Miray Varol defended this thesis on November 2, 2012.

The members of the supervisory committee were:

Mariko Haneda
Professor Directing Thesis

Lawrence C. Scharmann
Committee Member

Rebecca Galeano
Committee Member

The Graduate School has verified and approved the above-named committee members, and certifies that the thesis has been approved in accordance with university requirements.

Dedicated to my beloved husband Volkan

ACKNOWLEDGEMENTS

I would like to acknowledge and extend my heartfelt gratitude to the people who have made the completion of this thesis possible. First of all, I would like to thank my advisor Dr. Mariko Haneda for her practical advice, support, and assistance in this study.

Secondly, I would like to express the deepest appreciation to my committee members, Dr. Rebecca Galeano and Dr. Lawrence Scharmann for their unending support, encouragement, and inspiration throughout my graduate studies. Without their help and support, I would not be where I am, now.

I would also like to thank Dr. Dale Smith and his lovely wife Karen Smith who provided me with an opportunity to teach my native language, Turkish, here in the United States. I am extremely grateful to them for always making me feel at home and being a family to me.

Finally, a special word of appreciation to Serkan Erdemli for his friendship, support, and encouragement.

TABLE OF CONTENTS

List of Tables.....	vii
List of Figures.....	viii
Abstract.....	ix
1. INTRODUCTION.....	1
2. LITERATURE REVIEW.....	7
2.1 Age Factor and Maturational Constraints.....	7
2.2 Contrastive Analysis.....	12
2.2.1 Contrastive Analysis Hypothesis (CAH).....	12
2.3 Turkish Sound System.....	14
2.3.1 Turkish Consonants.....	15
2.3.2 Turkish Vowels.....	17
2.4 English Sound System.....	18
2.4.1 English Consonants.....	19
2.4.2 English Vowels.....	20
2.5 English and Turkish Sound Systems in Contrast.....	21
3. METHODOLOGY.....	23
3.1. Study Design.....	24
3.2 Participants and Setting.....	24
3.3 Procedures.....	25

3.4 Instruments	26
3.5 Data Collection.....	28
3.6 Rating Process.....	28
4. RESULTS.....	30
4.1 Questionnaire Responses.....	30
4.2 Results for Research Question 1	32
4.3 Results for Research Question 2	36
4.4 Results for Research Question 3	38
4.5 Summary.....	38
5. DISCUSSION AND CONCLUSIONS	40
APPENDICES	44
A. HUMAN SUBJECTS COMMITTEE APPROVAL LETTER	44
B. QUESTIONNAIRE.....	45
C. SELECTED ENGLISH WORDS AND SENTENCES.....	47
D. CONSENT FORM	49
REFERENCES.....	52
BIOGRAPHICAL SKETCH.....	55

LIST OF TABLES

Table 2. 1: Examples of Turkish Consonants in Words.....	16
Table 2. 2: Examples of Turkish Vowels in Words	18
Table 3. 1: Target Words with Turkish Counterparts.....	27
Table 4. 1: Mean Rating Scores of Participants' Pronunciations of all Target Words in Context.....	33
Table 4. 2: Mean Rating Scores of Participants' Pronunciations of all Target Words In Isolation.....	33
Table 4. 3: Overall Mean Ratings and Standard Deviations of Pronunciation of each Target Words by Participants	35
Table 4. 4: Average of Ratings Assigned for the Target Words	36
Table 4. 5: Mean Ratings and Standard Deviations for Same Spelling and Different Spelling Target Words in Context.....	37

LIST OF FIGURES

Figure 2. 1: Turkish Consonants	15
Figure 2. 2: Turkish Vowels.....	17
Figure 2. 3: American English Consonants	19
Figure 2. 4: American English Vowels.....	20

ABSTRACT

The study investigates the effect of the sound system of Turkish on Turkish adult speakers' English pronunciation of words that also exist in Turkish as loanwords from Indo-European language. More specifically, it examines the sounds that speakers of Turkish transfer from their native language when producing these words as well as the accuracy of their pronunciation of selected target words.

Eight Turkish doctoral students participated in this study. The data were collected through a questionnaire and an elicitation instrument. The questionnaire gathered information including the participants' English learning experiences, length of residence in the U.S., and amount of interaction in the target language. The elicitation instrument focused on twenty-one words that Turkish and English share, which the participants were likely to use in their current lives. The participants read 21 words in isolation and in sentences, and their speech was audio-recorded. The recorded data were evaluated by two raters to determine how close their pronunciation of each word was to that of native speakers of English, based on a 5-point scale.

Findings revealed that Turkish adult speakers had difficulty producing the English phonemes θ , δ , \jmath , ʃ , æ . Because these phonemes do not occur in their native language, the participants replaced these sounds with the closest Turkish phonemes t , d , r , e . The findings also suggested that the only participant who received explicit instruction in

English phonology and pronunciation did not experience any difficulty with the English specific phonemes. Finally, the participants' pronunciation of the selected target words that are spelled the same in Turkish was more accurate compared to the ones that are spelled differently.

CHAPTER ONE

INTRODUCTION

Pronunciation plays an important role in communication in a second language (L2). No matter how rich our lexicon in a second language is and how familiar we are with the structures and rules of the L2, it is not possible to convey our messages accurately without proper pronunciation, rhythm, intonation. In short, pronunciation is an important aspect of language that makes our speech comprehensible and intelligible to native speakers.

Every second language learner desires to speak the target language like a native speaker. They consider pronunciation of the language to be the main indicator of how much they know about the language itself. The main idea behind this belief is that second language learners are primarily judged by native speakers based on their ability to accurately produce the target language sounds using appropriate intonation and rhythm. Therefore the more similar one's pronunciation is to that of a native speaker, the more likely a native speaker will label the speech as comprehensible and intelligible (Munro & Derwing, 1995)

Although pronunciation plays a critical role in interacting in a second language, it is mostly overlooked by language educators until the audio-lingual method placed an emphasis on listening and speaking. One of the reasons pronunciation instruction was

absent from language classrooms was that “the study of pronunciation has been marginalized within the field of applied linguistics” (Derwing & Munro, 2005, p. 379). Therefore, the possible audience of publications that reported findings from these studies was mostly linguists rather than language educators.

There are many factors that impact the acquisition of second language phonology. The age at which a learner is first exposed to a second language, the amount of first and second language use, and the quality and quantity of second language input are several factors (Hammarberg, 1988). The age of first exposure to the target language has been considered to be an important factor in pronunciation acquisition. According to Scovel (1988), the reason pronunciation holds a special status in overall second language acquisition is that it is the only part of a language that is directly physical, and as people get older they are likely to lose the skills that they used while acquiring the first language (p.62). Lenneberg proposed “the critical period hypothesis” (1967) as an explanation of how the age at which people begin learning a language may affect the acquisition process. Although it was originally proposed for first language acquisition, it has been well accepted in the second language acquisition (SLA) literature.

Critical period hypothesis suggests that children who begin learning language after puberty may not be able to fully acquire all aspects of the language successfully. According to Lenneberg (1967), people go through physiological changes during puberty and as a result of these changes and lose some of the processing abilities in the brain as a result of these changes. Baker, Trofimovich, Flege, Mack and Halter conducted a study in 2008, to test the critical period hypothesis for second language

pronunciation. Their findings indicated that Korean young learners of English were better than Korean adult learners in terms of production of L2 specific sounds. Even though the Korean adults had been learning English for a very long time, children's pronunciation of English specific sounds was better than that of adults.

Another factor that greatly influences learners' ability and capacity of acquiring L2 pronunciation is the type of interaction between L1 and L2 sound systems. To explain the impact of the first language on L2 acquisition, many theories and hypotheses have been proposed so far. The most influential was the contrastive analysis hypothesis which was based on the systematic study of comparing and contrasting two or more languages in order to predict and explain the source of errors that L2 learners make when they use the target language.

Three versions of contrastive analysis have been proposed in the literature. The first version proposed by Lado (1957) claimed that the differences between languages are the main sources of errors made by L2 learners. According to Lado, learners are more likely to successfully acquire a target language if it is similar to their native language in terms of syntax, vocabulary, writing system etc. In terms of second language pronunciation, this conclusion has been interpreted as that learner will have difficulty with sounds that don't exist in their native language sound system. It later was abandoned due to the fact that not every learner made the errors it predicted.

The second version of the contrastive analysis hypothesis proposed by Wardhaugh (1970), referred to as "the weak version", was based on the examination and explanation of the mistakes that often occur rather than predicting them as the

previous version had claimed to do. The weak version aimed to analyze the errors of learners and then explain the possible sources that may have caused the errors. This version later was developed into Error Analysis. Error Analysis is the study of the errors that second language learners produce in an L2. This type of analysis is used to determine the type and the cause of the errors produced by L2 learners.

Finally, a third version of the contrastive analysis hypothesis, proposed by Oller and Ziahosseiny (1970), claimed that (1) when the differences between target language and L2 linguistic systems (syntax, phonology etc) are minimal, confusion occurs; and (2) therefore similarities between two languages may pose a challenge for learners. When interpreted in relation to pronunciation, this implies that learners are more likely to have difficulty acquiring the target sounds that are similar to the ones in their native language sound system. For example, for Turkish learners of English, it would be assumed that their production of English word 'thanks' as 'tanks' result from the similarity between English specific sound /th/ and Turkish /t/ sound. In this case source of the Turkish learners' pronunciation difficulty is not the absence of /th/ in Turkish sound system but the existence of a similar sound /t/.

Although contrastive analysis was used in second language teaching as a useful tool, it later lost popularity as a hypothesis that was grounded in Behaviorism. Even though previous versions of contrastive analysis hypothesis have been criticized due to its lack of evidence, the third version has been supported by empirical evidence. For example, Flege (1987, 1990) suggested a similar explanation for the pronunciation difficulties experienced by second language learners. He stated that it is more difficult for learners to acquire target language sounds that are somehow similar to L1 sounds

than acquiring the sounds that are dissimilar. This has been supported by many studies by Flege himself and other researchers in the field. For instance, Eckman, Elreyes, and Iverson (2003) conducted a study with speakers of English whose first languages were Spanish, Japanese, and Korean. The researchers created three different learning situations where there was a different type of phonemic contrast between L1 and L2: (1) native language didn't have any of the two sounds that contrast in the target language; (2) native language had only one of the L2 specific sounds; (3) both of the L2 specific sounds exist in the native language. Results suggested that the more similar the L2 sounds are the more difficult it is for learners to produce them.

Major characteristic of the studies conducted in this field is that the native languages they address are limited to the majority immigrant languages spoken in the U.S. such as Spanish, Korean, Italian, and Chinese (Aoyama, Flege, Guion, Akahane-Yamada, & Yamada, 2004; Elliott, 1995; Flege, Birdsong, Bialystok, Mack, Sung, & Tsukada, 2006; Flege & Liu, 2001; Flege, Schirru, & MacKay, 2003; Jia & Aaronson, 2003). Considering the fact that native language heterogeneity in ESL classrooms is growing day by day, teachers are in need of more practical findings that they can use to better teach English pronunciation to their students from all over the world. The present study aims to achieve this goal by focusing on English pronunciation of selected words by Turkish English speakers who are growing in number in American classrooms. The results obtained in this study could benefit both Turkish speakers learning English in the U.S. and teachers who teach Turkish learners English. Furthermore, the current study may help language teachers and learners to better understand the English vowel and consonants sounds that create difficulty for Turkish speakers. The English specific

sounds that Turkish speakers of English have difficulty pronouncing could serve as a tool for teachers in Turkey to better teach English pronunciation to their students.

This study was guided by the following questions:

- 1) How do Turkish speakers of English pronounce the words that also exist in their native language as Indo-European loanwords?
- 2) Does the way in which words are spelled lead to any difference in their pronunciation?
- 3) To what extent do Turkish speakers of English transfer their first language sound system when they pronounce the selected loanwords in English?

CHAPTER TWO

LITERATURE REVIEW

Since the participants of the present study are adult learners of English, I will first give an overview of the age factor in second language pronunciation acquisition along with a summary of findings from previous studies that investigated the effect of the age of first exposure to a language on the acquisition of second language pronunciation.

Furthermore, the length of residence (LOR) in the second language speaking country and the amount of first and second language use will also be explored. Next, the contrastive analysis hypothesis (CAH) will be introduced, and finally a contrastive analysis of Turkish and English sounds systems will be presented at the end of this chapter.

2.1 Age Factor and Maturation Constraints

In second language acquisition, it is usually observed that children can easily learn a second language whereas adults may struggle in communicating in the target language even after many years of instruction and experience (Major, 2001). For example, when families immigrate to another country, children are able to pick up the words and phrases of the L2 and usually begin to speak like native speakers after a shortly after they are exposed to the second language (Major, 2001). On the other hand, it is very uncommon to see parents who speak the target language fluently even if they have had

prior instruction and experience in the L2. In order to provide an explanation of this common belief, Penfield and Roberts (1959) proposed the well known critical period hypothesis (CPH). According to the critical period hypothesis, language acquisition process must start before the age 9 in order for a person to be able to fully acquire the language. Similarly, Lenneberg (1967) who popularized the CPH stated that the reason behind why adults may not be able to fully acquire the language is the biological changes that occur in the brain during puberty.

Although CPH was originally proposed for first language acquisition, it later was widely accepted in the second language acquisition (SLA) field. Similarly, its claim for SLA was that there is an ideal time period after which the acquisition of a L2 becomes more difficult as a result of the loss of plasticity in the brain (Scovel, 1988; Patkowski, 1980, 1990). Moreover, Scovel (1988) suggested that the impact of critical period is even stronger on the L2 pronunciation acquisition due to the fact that “pronunciation is the only part of language which is directly physical...” (p.62). In other words, as a result of this characteristic of pronunciation, the speech of learners who began learning the L2 after puberty may lack segmental (individual sounds) and/or suprasegmentals (intonation, stress, rhythm) of the target language. For instance, late learners may have difficulty in producing the L2 specific sounds, using the correct intonation and stress even when they achieve a native-like proficiency in other aspects of the L2 such as syntax. As a result of lack of the segmental and prosodic elements, late learners maintain a ‘foreign accent’ which is an indicative of their native language.

A considerable amount of literature has investigated the impact of the age of first exposure on SLA process. The existence of a critical period and its effects on

pronunciation has been supported by many studies conducted in this field. For example, Yamada (1995), in his study with Japanese learners of English, proved that younger learners are better than late learners in terms of pronunciation of /r/ and /l/. Similarly, Patkowski (1990) found that there is a strong relationship between the age learners were first exposed to the language and their pronunciation accuracy. Furthermore, the results of his study showed that the pronunciations of the participants who moved to the U.S. before the age 15 were more native-like compared to the ones who moved to the U.S. after the age 15. Similarly, Munro, Flege, and MacKay (1996) examined the productions of 11 English vowels among 240 native speakers of Italian. The results indicated that the young learners' pronunciation was more accurate compared to that of the older speakers. Additionally, late learners failed to produce all 11 vowels consistently even though they had been living in Canada for more than 30 years.

In summary, the results of the previously cited studies show that there is a strong relationship between the age of first exposure to the L2 and the acquisition of the L2 pronunciation. As suggested by the critical period hypothesis, the L2 pronunciation of learners who moved to a second language environment at early ages was more similar to that of a native speaker than that of older learners.

Although these findings present evidence in support of the existence of a critical period for second language acquisition, an increasing number of studies have claimed that there is not a critical period for L2 pronunciation. Although, the studies carried out to test critical period for pronunciation usually compared adult learners to younger learners, later researchers focused only on adult learners. For example, Bohn and Flege (1992) who examined the acquisition of the English vowel sounds /e/ and /æ/ by

experienced German speakers of English provided evidence against the existence of critical period for second language pronunciation acquisition. Their findings suggested that the German participants with an average age of 30 pronounced these vowels similar to a native speaker. Additionally, two studies showed that English pronunciations of highly proficient Dutch learners (Bongaerts, Planken, & Schils, 1995; Bongaerts, van Summeren, Planken, & Schils, 1997) were rated as native-like by native speaker judges.

Although a considerable amount of research has provided evidence both for and against the critical period, it should be pointed out that they were mostly concerned with age and failed to address the other variables that are believed to be confounded with age such as motivation and the amount and quality of input in L2 (Moyer 1996, 1999). For instance, the findings of Bongaerts et al. (1995, 1997) suggested that adult Dutch learners attained a native-like proficiency in the pronunciation of English. However it should be noted that the learners participated in these studies were all exposed to English at or around the age of 12, which is considered to be the closing of critical period. Also they all received good quality and quantity L2 input in later years. They all studied English in the university and received explicit instruction on English phonology and pronunciation; additionally they all spent a whole year in L2 speaking country, England, where they were surrounded by native speaker input and as a result had the opportunity to use L2 as their dominant language. In this case it may be assumed that the prior experiences and intensive instruction on pronunciation may have contributed to the learners' proficiency. Similarly, Jia and Aaronson (2003) conducted a longitudinal study with Chinese learners between the ages 5 and 16. The findings showed that

subjects who immigrated to the U.S. at the age of 9 or younger began using mostly L2 rather than L1 within first year of their arrival. As a result, they were more proficient in L2 than they were in L1. However, the older learners maintained L1 as their dominant language in first three years and were exposed to more L1 input rather than L2; as a result they were less proficient in L2 compared to the younger learners. From these findings, it could be concluded that the amount of L2 use also plays an important role in the acquisition of L2 pronunciation. Finally, Flege, Frieda, and Nozawa (1997) who examined the English pronunciation of Italian immigrants reported similar results with the aforementioned study. Their findings confirmed the impact of L2 use on the accuracy of L2 pronunciation. In other words, the participants who spoke Italian more than English had a stronger foreign accent than the ones who spoke English as their dominant language.

As suggested by previous studies in the L2 pronunciation acquisition field, the age at which learning begins affects the learners' pronunciation accuracy (Major, 2001). Moreover, when the acquisition begins after puberty, speakers may fail to successfully acquire segmental (sounds) or suprasegmental (rhythm, intonation, stress). Furthermore, younger learners are thought to learn the pronunciation of L2 more easily and rapidly compared to the adult learners (Flege & McKay, 2011). On the other hand, it should be pointed out that the age of learners, by itself, has limitations in explaining why adults and younger learners differ in terms of L2 pronunciation. Therefore, other factors such as time spent in an L2 environment, the amount of L1-L2 use and the quality of input in the target language should also be taken into consideration (Flege & McKay, 2011).

2.2 Contrastive Analysis

Contrastive analysis is a systematic study of comparing and contrasting two languages in order to identify the differences and similarities between two linguistic systems.

Contrastive analysis was widely used in foreign and second language teaching field in the 1960s in order to inform language educators about potential sources of errors of second language learners.

2.2.1 Contrastive Analysis Hypothesis (CAH)

The contrastive analysis hypothesis was first proposed by Lado (1957) in his well known work *Linguistics across Cultures*. The psychological foundation of contrastive analysis hypothesis was the learning theory known as “Behaviorism”, which is associated with B.F. Skinner. Because behaviorism considered foreign/second language learning as the creation of new linguistic habits, contrastive analysis was founded on the assumption that in the process of forming new habits, in this case a new language, learners tend to rely on their first language and transfer its rules and features (Major, 2001). Thus contrastive analysis hypothesis claimed that it is possible to predict the errors that second language learners make in their new language by comparing and contrasting the linguistic features of the two languages (Lado, 1957). Furthermore Lado (1957) stated:

We assume that the student who comes in contact with a foreign language will find some features of it quite easy and others extremely difficult. Those elements that are similar to his native language will be simple for him, and those elements that are different will be difficult. (p.2)

According to Lado, the differences between L1 and L2 are more difficult to learn because they are completely new to the learner whereas similar aspects will be easier due to the fact that the learner has already learned them in their first language. For example, the Turkish language does not have gender specific pronouns and uses “o” for both the English ‘he’ and ‘she’. As a result of the lack of these pronouns in their language, Turkish learners will have difficulty in using the English ‘she’ and ‘he’. Turkish learners will tend to fail in using an appropriate pronoun when writing and conversing in English. Although this first version of CAH, referred to as “the strong version” was widely used in the second language acquisition field, it later was abandoned because not every learner made the errors that CAH predicted.

After the strong version of CAH received criticism due to its lack of evidence, a weak version was proposed by Wardhaugh (1970). While the strong version claimed to predict and explain the interference errors of learners only through comparison of linguistic features of L1 and L2, the weak version offered evidence to explain the potential difficulties learners are likely to face when learning a new language. The evidence it provided was the errors that learners of a given language already consistently made. Errors that learners made were examined to provide an explanation for the problematic areas that result from the transfer from the first language. For example, Turkish learners pronounce the English word ‘bad’ as ‘bed’. The examination of this error will show that Turkish speakers have difficulty pronouncing the vowel sound in ‘bad’ mainly because it does not occur in Turkish. Even though this version was able to explain the errors after they occurred, it still was criticized due to the fact that it

couldn't successfully point out what aspects of a second language would be more difficult to learn.

Finally, Oller and Ziahosseiny (1970) proposed the moderate version based on their study of spelling errors. They found that learners whose native language used the same alphabet as their second language made more spelling mistakes compared to those whose language was based on a different alphabet. Unlike the previous versions, the moderate version of CAH focused on similarities between the L1 and L2 as the possible sources of errors. It suggested that because similar linguistic aspects of two languages can cause confusion, it would be more difficult to acquire the items that are somehow similar to the ones in the L1. Even though the contrastive analysis received much criticism due to its lack of evidence and lack of criteria for comparison, it is still considered to be a useful tool for teaching and learning L2 pronunciation. The contrastive analysis of a first and second language can be used as a guide when preparing materials to teach a second language pronunciation.

2.3 Turkish Sound System

Turkish is a member of the Turkic language family. Its alphabet is based on the Latin alphabet. As an orthographic language, words in Turkish are “written the way they are pronounced and pronounced the way they are written “(Balpınar, 2006:7). This feature of Turkish language usually makes it difficult for its speakers to learn English because this type of relationship between letters and sounds does not exist in English. There are 29 letters in the Turkish alphabet, including 21 consonants and 8 vowels. Although this description and the number of sounds may vary in different sources, the information that will be presented in the following sections regarding the Turkish and English sound

inventory will be grounded on the information provided by the International Phonetic Association in *The Handbook of International Phonetic Association* (1999).

2.3.1 Turkish Consonants

The classification of Turkish consonant sounds according to the International Phonetic Association (1999) is presented in Figure 2.1. Examples for each consonant sounds are presented in Table 2.1 below.

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Palatal	Velar	Glottal
Plosive and Affricate	p b		t d		tʃ dʒ	c ɟ	k g	
Nasal	m		n					
Fricative		f v	s z		ʃ ʒ		ɣ	h
Tap				ɾ				
Approximant						j		
Lateral Approximant			ɭ		ɭ			

International Phonetic Alphabet (IPA), 1999:p.154

Figure 2. 1: Turkish Consonants

Table 2. 1: Examples of Turkish Consonants in Words

p	puł	stamp	t	tel	wire	c	car	profit
b	buł	find	d	del	'pierce'	ɟ	ɟem	'bit (for a horse)'
						k	kar	'snow'
						g	gam	'grief'
			m	Mał	'property'	n	nał	'horseshoe'
			r	rej	'vote'			
f	far	'headlight'	s	sar	'wrap'			
v	var	'exists'	z	zar	'membrain'	ɣ	Day [da:]	'mountain'
						h	her	'every'
			tʃ	tʃam	'pine'			
			dʒ	dʒam	'glass'			
						j	jer	'place'
			ɫ	ɫaɫa	'servant'			
			l	la:'le	'tulip'			

Adapted from International Phonetic Alphabet (IPA), 1999:p.154

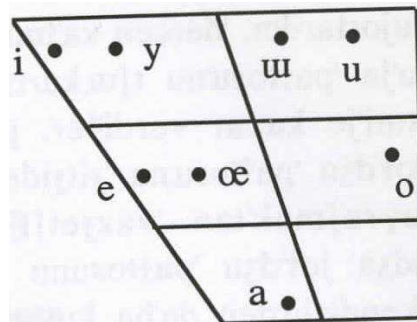
As observed in Figure 2.1, Turkish has 8 plosives; [p, b, t, d, c, ɟ, k, g] and 2 affricates; [dʒ] and [tʃ]. Among these, [p, t, tʃ, c, k] are voiceless consonants and [b, d, dʒ, ɟ, g] are voiced. In Turkish, voiced plosives do not occur in word-final position. Additionally voiceless plosives [p, t, c, k] are usually aspirated in syllable-initial position, for instance in words such as peder (father), teneke (can), kedi (cat), and kar (snow). As seen in the Figure 2.1, Turkish nasal consonants are /m/ and /n/ which are considered to be the most common nasal sounds that most languages have. There are 8 fricatives in Turkish. Among them [f, s, ʃ, h] are voiceless whereas [v, z, ʒ, ɣ] are voiced. There has been a debate over the consonant sound /ɣ/ which corresponds to the letter 'ğ' also called as soft g. Some consider it a letter rather than a sound. However International Phonetics Association treats it as a velar fricative consonant sound. The main function of soft 'g' in pronunciation is that it lengthens the preceding vowel sound. For example,

in the Turkish word 'yoğurt', 'ğ' lengthens the vowel 'o' and pronunciation of the word almost sounds like 'yoourt'.

Additionally, Turkish has a tap consonant /r/ which is flapped 'r' and slightly different than the English [ɹ] which is a rolled 'r'. Finally, there are 3 approximants in Turkish; [l], [ɮ], and [j]. Both sounds occur word initially except [l] occurs before the vowels 'e, i, ö, ü' whereas /ɮ/ occurs before 'a, ı, o, u'.

2.3.2 Turkish Vowels

The vowel system of Turkish consists of 8 vowels; 'a', 'e', 'i', 'ı', 'o', 'ö', 'u', 'ü'. The classification of Turkish vowels according to the International Phonetic Association (1999:p.155) is provided below in Figure 2.2 as well as the example words for pronunciation of these vowels in Table 2.2.



International Phonetic Alphabet (1999:p.155)
Figure 2. 2: Turkish Vowels

Table 2. 2: Examples of Turkish Vowels in Words

Sound	Letter	Words	English Meanings
i	ı	kil	clay
y	ü	kyl	ashes
e	e	kel	bald
æ	ö	gæl	lake
a	a	kaɫ	stay
ʊ	ı	kuɫ	hair
u	u	kuɫ	slave
o	o	koɫ	arm

Adapted from International Phonetic Alphabet (1999: p. 155)

Turkish vowels are categorized as front-back, rounded-unrounded, and high-low vowels. Front and back vowels are named based on the place of articulation in the mouth. For example, the vowels ‘e’, ‘i’, ‘ü’, and ‘ö’ are produced in the front of the mouth therefore they are called front vowels whereas ‘a’, ‘o’, ‘u’, and ‘ı’ are produced in the back and named back vowels. Furthermore, the vowels ‘o’, ‘ö’, ‘u’, and ‘ü’ are called rounded due to the position of the lips when producing these vowels. Unrounded vowels are ‘a’, ‘e’, ‘i’, ‘ı’. Finally, high vowels: ‘ı’, ‘i’, ‘u’, ‘ü’ and low vowels: ‘a’, ‘e’, ‘ö’, ‘o’ are categorized based on the position of the mouth during production of these sounds. Although there are not any diphthongs in Turkish, according to the International Phonetic Alphabet “diphthongs can be treated as sequences of vowel and the consonant /j/” (1999: p.155).

2.4 English Sound System

As a member of the Indo-European language family, the English alphabet is based on the Latin alphabet. There are 24 consonants in the English sound system; most of them are similar to the Turkish consonants.

2.4.1 English Consonants

The classification of the English consonants based on International Phonetic Alphabet (1999) is presented in Figure 2.3.

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Palatal	Velar	Glottal
Plosive	p b			t d			k g	
Affricate					tʃ dʒ			
Nasal	m			n			ŋ	
Fricative		f v	θ ð	s z	ʃ ʒ			h
Approximant				r		j	w	
Lateral Approximant				l				

International Phonetic Alphabet (IPA), 1999:p.41

Figure 2. 3: American English Consonants

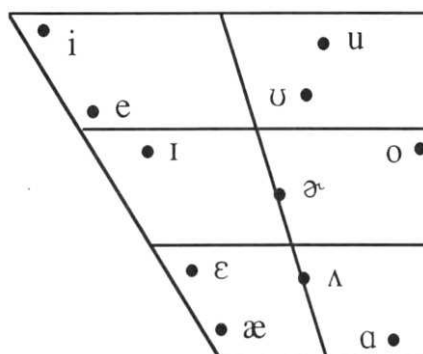
As shown in Figure 2.3 English sound system has six plosives, these are [p, b, t, d, k, d, g]. The same plosives also exist in Turkish sound system. Similarly both sound systems share the affricate sounds [dʒ] and [tʃ] as well as the nasal consonants [m, n].

Furthermore English has an additional nasal sound /ŋ/ which also occurs in Turkish although it is not mentioned as a distinct sound. Additionally [f, v, s, z, ʃ, ʒ] and [h] are the common fricative consonants that exist in both languages but English has the [θ] and [ð] sounds that are different than Turkish whereas Turkish has the [ɣ] sound,

which is different than English. Finally, English approximants are [ɹ, j, w, l]. Among these sounds, only [w] does not occur in Turkish.

2.4.2 English Vowels

The vowels in languages are classified based on three major characteristics: frontness, height and rounding. Turkish vowels are based on these parameters whereas English vowel sounds are also classified as tense-lax, short-long and diphthongs. The classification of English vowels based on IPA (1999) is provided in Figure 2.4.



International Phonetic Alphabet (IPA), 1999:p.41

Figure 2. 4: American English Vowels

Based on the aforementioned classifications; rounded vowels of English are [u, o, ʊ] whereas all others are unrounded. Furthermore, [i, e, u, o, ɑ, ə, ʌ] are tense while all the others are lax. Similarly [i, e, u, ʊ] are high vowel sounds are [ɪ, o, ə] are mid vowels whereas [ɛ, ɑ, æ, ʌ] are low vowels. Additionally, long vowels are [i, u, o, ɛ] and short vowels are [e, ə, æ, ʌ, ɑ, ɪ, ʊ]. Finally English has three diphthongs; [ai] as in 'die', [au] as in 'how' and [oi] as in 'boy'.

2.5 English and Turkish Sound Systems in Contrast

In a comparing and contrasting Turkish and English, even though their alphabets are both based on the Latin alphabet, their morphology, syntax, and vocabulary differ to a great extent. On the other hand, the consonants of both sound systems are similar except English has consonants that do not exist in Turkish. For example, the Turkish consonant inventory lacks interdentalals [θ] as in 'thanks' and [ð] as in 'this'. The absence of these two sounds usually leads Turkish speakers of English to perceive and produce these sounds as [t] and [d]. Another consonant that does not occur in Turkish is [w]. The sound [w] is usually substituted with the nearest Turkish sound [v] by Turkish speakers. For example, Turkish speakers are likely to pronounce 'when' as 'ven' due to absence of this sound in Turkish consonant inventory.

Although there may not be major differences between these two languages' consonant inventories, it is mainly the differences between Turkish and English vowels that create difficulty for Turkish speakers in English pronunciation. Turkish vowels are categorized into three main groups as rounded-unrounded, high-low, and front-back. On the other hand English has additional classification for its vowels such as tense-lax. Even though Turkish lacks this type of discrimination in its vowel inventory, it should be pointed out that because some vowels that are categorized in English as tense also occur in Turkish, they do not pose difficulty in pronunciation. For example, while the vowel sound /a/ exists in both sound systems, it is specified as tense in English in addition to low and unrounded. Similarly, it is categorized as low and unrounded in Turkish. On the contrary, some of the lax vowels of English are among the most problematic areas in terms of pronunciation of English by Turkish speakers. For

example the vowel [æ] does not exist in Turkish vowel inventory. As a result of the absence of this sound, most Turkish speakers pronounce this vowel either [e] or [ɑ]. For example, “pack” is usually pronounced as “peck” by Turkish speakers.

Finally, the English sounds that do not occur in Turkish are diphthongs; [aɪ], [aʊ], and [oi]. Among these only [ai] occurs in Turkish although it is not classified as a distinct sound. For example, the diphthong [ai] occurs in the first syllable of the Turkish words ‘ayna’ (mirror) and ‘aynı’ (identical). Additionally a similar sound to [ɔɪ] also occurs in Turkish. For instance, it occurs in the word ‘koy’ (put) although its pronunciation differs slightly than that of [ɔɪ]. Because there is not any similar sound for the diphthong [au] in Turkish, when Turkish speakers encounter words that contain this sound usually pronounce [au] as [ɑ]. For example, ‘how’ is usually pronounced as ‘hav’ by Turkish speakers.

CHAPTER THREE

METHODOLOGY

This study investigated the effect of Turkish phonology on the pronunciation of English words that also exist in Turkish as Indo-European loanwords. In other words, the current study sought to find out how accurately Turkish speakers of English articulate these words in English. Furthermore, this study explored if the spelling of these words create any difference in their English pronunciation.

The review of the literature revealed the need to explore Turkish speakers' English pronunciation of the loanwords that have been adapted into Turkish from Indo-European languages (e.g. English, French, and Italian). One goal of the current study, therefore, was to add to the existing knowledge base of the adult second language learners' pronunciation acquisition.

The design and methodology employed in this study is described in this chapter. The chapter begins with information about the study design. This is followed by the descriptions of the participants and settings. Next, instrument and data collection procedures are presented. Finally, the rating and procedures used to analyze the data are described.

3.1. Study Design

The present study aims to examine the impact of first language pronunciation on second language pronunciation by exploring the pronunciations of words that Turkish and English share. Additionally, it explores whether or not the spelling of these words creates any difference in their English pronunciation. Finally, it aims to identify the sounds that learners transfer from their native language when producing the loanwords.

The present study is looking for answers to the following three research questions;

- 1) How do Turkish speakers of English pronounce the selected English words that also exist in Turkish as loanwords from Indo-European languages?
- 2) Does the way in which words are spelled lead to any difference in their pronunciation?
- 3) To what extent do Turkish speakers transfer sounds from their first language when they pronounce the selected English words?

3.2 Participants and Setting

This study was carried out at the College of Education in the Florida State University, in the fall semester of 2012. The sample for this study consists of 8 (4 males, 4 females) Turkish doctoral students. Participants ranged in age from 27- 34 with an average of 29 years old. All of the participants began learning English as a foreign language at the age

of 12 in 6th grade, and they attended Turkish public schools where English is offered 2 hours a week.

After they completed their undergraduate studies in Turkey, the participants received a government scholarship to pursue graduate studies in the United States. As a requirement of the scholarship they received, all the participants attended English classes at a university prior to their departure to the United States. Upon arrival in the U.S., participants were placed into an intensive English language program where they were taught both the language skills needed for daily interactions and academic English to prepare them for the TOEFL and GRE exams.

3.3 Procedures

Sensitivity to ethical issues concerning the human subjects' protection is important for any study. Florida State University Institutional Review Board approved this study to involve human subjects (Appendix A). Upon the IRB approval, Turkish doctoral students at the Florida State University were invited to participate in the study by e-mail and in person. Participants were volunteers and they were informed that there were no payments, rewards, or incentives offered for participating in this study. There was no treatment or training before or after administering instruments. In addition to this, participants were informed that their identities would be kept anonymous. To ensure the protection of participants' identities, demographic questionnaire and audio files for each participant were labeled by number. The data collection was conducted by the investigator in LRC study rooms in the College of Education, one participant at a time. The day and time of meeting with participants were selected according to participants' preference.

3.4 Instruments

The instrument used in this study consists of two parts (Appendix B and Appendix C). The first part of the instrument is the questionnaire (Appendix B). This questionnaire was used to find out about participants' learning experiences of English as a foreign language in Turkey and as a second language in the United States. The questionnaire consisted of 13 open-ended questions related to the age of initial exposure, the length of residence in the U.S., educational background, prior language learning experiences, other languages spoken and the amount of interaction in the target language. Another purpose of employing this questionnaire was to find out if the learners have received any explicit instruction on English pronunciation.

The second part of the instrument (Appendix C) consists of 21 words that both Turkish and English share along with 21 sentences containing these words. First, a list of words that exist in both Turkish and English was created. The list consisted of 50 loanwords. It was presented to 4 Turkish graduate students at the Florida State University. These students selected 21 words that they thought they used/heard the most frequently during their interaction with native speaker peers, professors...etc. The purpose of this selection was to make sure the participants frequently come across the English words in their interactions, which would indicate they know their meaning and they have heard native English speakers pronounce these words. These 21 words were organized into two groups. The first group of words is spelled the same in both Turkish and English (for example "program" and "data"). The second group of words is spelled differently in Turkish and English ("kategori" (Tur.) vs. "category" (Eng.). Then a sentence was created to provide a context for each of the 21 words. The words and

sentences were written on individual flash cards. In Table 3.1 below, the English words used in the study are presented along with their Turkish counterparts.

Table 3. 1: Selected English Words with Turkish Counterparts

	English	Turkish
Same Spelling	Data	Data
	Format	Format
	Problem	Problem
	Sponsor	Sponsor
	Model	Model
	Partner	Partner
	Internet	Internet
	Program	Program
	Transfer	Transfer
Different Spelling	Analyze	Analiz
	Campus	Kampüs
	Category	Kategori
	Conference	Konferans
	Document	Doküman
	Method	Metot
	Perspective	Perspektif
	Potential	Potansiyel
	Theory	Teori
	Graphic	Grafik
System	Sistem	
	Exercise	Egzersiz

3.5 Data Collection

At the beginning of the meeting with the participants, each participant was presented IRB approval and informed consent form. They were allowed to read these forms and invited to ask if they had any questions regarding the study. After they agreed to participate in the study by signing the informed consent form, they were presented the first part of the instrument (Appendix B). They were given 10 minutes to complete the questionnaire. None of the participants used the given time entirely.

Once the participants finished answering the questionnaire (Appendix B), they were reminded that during the second part of the study their speech would be recorded. For the second part of the instrument, the participants read the sentences and words on the flashcard, and their speech was audio-recorded. The researcher showed the flash cards with sentences one at a time to the participants. Each participant was asked to read the sentences aloud. The procedure was conducted this way so they would not know which word was the target word, and would pronounce it without any special effort and more naturally as they would do in their daily conversations.

After finishing sentences, the participants were presented the target words one by one and were asked to pronounce them consecutively three times. They were asked to pronounce a total of 21 loanwords in English in sentences and then in isolation.

3.6 Rating Process

After the data collection was completed, the recorded speech samples collected from the participants were rated by two raters: one native and one non-native speaker of

English. During the rating process, a 5-point Likert type scale from 1 “non-native” to 5 “native” was employed.

When assigning a rating for each word, raters disregarded the suprasegmental aspects of speech such as stress, tone, and intonation. Each rater has, first, individually rated each participant’s pronunciation of words in sentences, and then they rated the pronunciation of the words in isolation.

During the rating process, the raters also took notes of the sounds that were problematic for the learners. Once the rating process was complete, they came together to compare the ratings they assigned for the pronunciations and to discuss the ratings that were different. A second analysis was conducted to identify the sounds that the participants transferred from Turkish.

In order to measure the inter-rater reliability, intraclass correlation coefficient was computed on the Likert-scale scores assigned by the independent raters. According to the results of this test, the intraclass correlation coefficient for the two raters’ ratings for the pronunciation of the selected English words in context was .87. The intraclass correlation coefficient for the two raters’ ratings for the pronunciation of the words in isolation was also .87. These values suggested that there was a strong agreement between the two raters’ ratings for pronunciation of the selected English words both in context and in isolation.

CHAPTER FOUR

RESULTS

This chapter presents the results of the analyses that were conducted to address three research questions. This chapter first presents the demographic information of the participants. Next, the results from the study are presented in the light of each research question.

The data were collected by the researcher one participant at a time. At the beginning of the data collection, the consent forms were collected from each participant. The data were collected by administering an instrument consisted of two parts each participants individually by the researcher. The first part of the instrument was designed to collect data about participants' English learning experiences as a foreign language in Turkey and as a second language in the United States. The second part of the instrument was designed to collect data about participants' pronunciation of the selected English words in context and in isolation.

4.1 Questionnaire Responses

The research participants consisted of 8 Turkish doctoral students currently enrolled at the Florida State University during the fall 2012. Four of the eight participants were female and four were male. The participants were all between the ages of 27 to 34, with an average of 29 (SD= 2.18). All of the participants began learning English at the age

12 when they were at 6th grade. They all attended at Turkish public schools where foreign language classes were taught in Turkish language. The English courses they attended during their public school education focused on grammar, vocabulary, and reading. Furthermore, they all stated that in the English courses they previously attended, the vocabulary taught was limited to content provided in the course book. Finally, the participants also stated that they did not have opportunity to speak English until they moved to the U.S.

Among 8 participants, 6 speak languages other than English. The languages spoken by 6 participants are German, Arabic, Kurdish, Hebrew, and French. Participants' proficiency in these languages ranges from beginner to intermediate level. Seven of eight participants have been living in the U.S. for 5 years and one participant has been in the U.S. for 4 years. Additionally, 7 participants attended an English school prior to their graduate studies whereas 1 participant received formal English instruction only in Turkey. Furthermore, five of eight participants stated that because they currently work as a teaching or research assistant, their dominant language is English. By contrast, 3 participants mostly speak Turkish and their English use is limited to daily conversations with peers and professors.

Finally, out of eight participants, only one participant received explicit instruction on English pronunciation. The course he attended was taught by a Turkish instructor who received his graduate degrees in England and in the U.S. This participant also stated that this course was based on English phonology and was helpful to improve participant's fluency in addition to the pronunciation. The participant added that during

the course, the instructor also introduced the prosodic elements of English such as rhythm, intonation, and stress patterns.

4.2 Results for Research Question 1

In order to answer the first research question; “How do Turkish speakers of English pronounce the selected English words that also exist in Turkish as loanwords from Indo-European languages?”, two raters used a 5-point scale to assign a rating to the participants’ pronunciations of target words. On the scale employed, 1 corresponds to “non-native pronunciation” and 5 correspond to “native-like pronunciation”. Although, in the second language pronunciation field, there has been a debate over whether it is the differences in the production of segmental (consonants and vowels) or suprasegmentals (intonation, stress e.g.) that give a speaker ‘foreign accent’ (Derwing & Munro, 2005), it should be noted that here in this study, raters focused on the segmental production due to the purpose of the study. In Table 4.2 and in Table 4.3 below a summary of the mean scores of overall ratings assigned for each participant for their pronunciations of English words in context and in isolation respectively are presented.

Table 4. 1: Mean Rating Scores of Participants' Pronunciations of all English Words in Context

	N	Mean	Standard Deviation
Participant 1	21	4.48	0.59
Participant 2	21	4.24	0.61
Participant 3	21	4.24	0.75
Participant 4	21	4.10	0.81
Participant 5	21	3.90	0.68
Participant 6	21	3.14	1.17
Participant 7	21	3.29	0.55
Participant 8	21	2.90	1.06

Table 4. 2: Mean Rating Scores of Participants' Pronunciations of all English Words In Isolation

	N	Mean	Standard Deviation
Participant 1	21	4.57	0.49
Participant 2	21	4.38	0.58
Participant 3	21	4.19	0.59
Participant 4	21	4.00	0.82
Participant 5	21	4.00	0.69
Participant 6	21	3.48	0.66
Participant 7	21	3.38	0.58
Participant 8	21	3.14	0.83

As observed in Table 4.1 and Table 4.2 above, none of the participants received a mean score of native-like pronunciation rating on their pronunciation of the English words in context or in isolation. Similarly, no participant was assigned a mean score of

non-native pronunciation, either. Overall mean of all participants' pronunciations of the English words in context was 3.79 ($SD = 0.55$). As shown in Table 4.1, Participant 1's overall pronunciation of 21 English words in context was rated highest with ($M = 4.48$, $SD = 0.59$). On the other hand, the participant 8's overall pronunciation of 21 English words were rated the lowest with ($M = 2.90$, $SD = 1.06$).

The pronunciation ratings of the participants in isolation are presented in Table 4.3. The overall mean of all participants' pronunciations of the English words in isolation was 3.89 ($SD = 0.48$). As shown in Table 4.2, Participant 1's pronunciation was rated the highest with ($M = 4.57$, $SD = 0.49$), and Participant 8's pronunciation was rated the lowest with ($M = 3.14$, $SD = 0.83$).

As observed in Table 4.1 and 4.2, the mean rating scores of participants' pronunciation of the selected English words *in isolation* were different that the mean scores of their pronunciation of the words *in context*. More specifically, six of eight participants received higher mean scores on the pronunciation of the words in isolation than they received on the pronunciation of the words in context.

In order to determine whether or not the difference between the mean scores of participants' pronunciation in context and in isolation was statistically significant, a Sign Test was used. The Sign Test, a variation of the Binomial Test, was selected since it is a conservative non-parametric measure employed for use when data are ordinal and the sample size is small ($n=8$ in this study). The results of the Sign Test suggested that the difference between participants' mean scores for in context and in isolation was

significant ($p=.03$). In other words, participants' pronunciation of the selected English words in isolation was more native-like than their pronunciation of the words in context.

Table 4.3, presents mean scores of how accurately the participants pronounced each word.

Table 4. 3: Overall Mean Scores of the Ratings and Standard Deviations of Pronunciation of each English Word by Participants

	Target Words	N	Mean	Standard Deviation
Same Spelling	data	8	4.56	0.50
	format	8	4.06	0.66
	internet	8	3.69	0.68
	model	8	4.13	0.70
	partner	8	4.19	0.39
	problem	8	4.56	0.50
	program	8	3.81	1.33
	sponsor	8	3.44	1.06
	transfer	8	3.31	0.85
Different Spelling	analyze	8	4.00	0.87
	campus	8	3.69	1.26
	category	8	3.25	0.97
	conference	8	3.88	0.70
	document	8	3.63	0.70
	exercise	8	3.81	0.63
	graphic	8	3.88	0.70
	method	8	3.44	1.17
	perspective	8	3.81	0.63
	potential	8	3.63	0.70
	system	8	4.44	0.50
theory	8	3.44	0.93	

Participants' pronunciation was rated over mid-point 3. As presented in Table 4.3 above, the target words "data" and "problem" received the highest mean ratings ($M = 4.56$, $SD = 0.50$), whereas the word "category" received the lowest mean ratings ($M = 3.25$, $SD = 0.97$).

4.3 Results for Research Question 2

"Does the way in which words are spelled lead to any difference in their pronunciation?"

Among the target words, *problem*, *data*, *partner*, *program*, *internet*, *sponsor*, *transfer*, *model*, and *format* are spelled the same in Turkish.

In Table 4.4 below all the words are organized in rank order based on the average ratings the participants received on the pronunciation of these words. The words that are spelled the same in Turkish are in bold.

Table 4. 4: Average of Ratings Assigned for the Target Words

	Target Words	Mean
1	problem, data	4.56
2	system	4.44
3	partner	4.19
4	model	4.13
5	format	4.06
6	analyze	4.00
7	graphic, conference	3.88
8	program , perspective, exercise	3.81
9	internet , campus	3.69
10	potential, document	3.63
11	theory, sponsor , method	3.44
12	transfer	3.31
13	category	3.25

As observed in Table 4.4, the participants were assigned the highest scores on the words ‘problem’ and ‘data’. On the other hand, the participants received the two lowest mean ratings on ‘transfer’ and ‘category’. Table 4.5 below presents the overall mean ratings and standard deviations of participants of target words that are spelled the same and different in context and in isolation.

Table 4. 5: Mean Ratings and Standard Deviations for Same Spelling and Different Spelling Target Words in Context

		N	Mean	Standard Deviation
English Words with Same Spelling	In Context	8	3.93	0.61
	In Isolation	8	4.01	0.37
English Words with Different Spelling	In Context	8	3.68	0.53
	In Isolation	8	3.80	0.61

As seen in Table 4.5, the participants received higher ratings from the raters on their pronunciations of English words that are spelled the same in Turkish than those that are spelled different. Similarly, the participants’ pronunciation ratings of the English words spelled the same, in isolation were higher than pronunciation ratings of the words spelled differently in context.

4.4 Results for Research Question 3

“To what extent do Turkish speakers of English transfer sounds from their first language when they pronounce the selected English words?” In order to answer this question, the raters came together to conduct a second analysis of the participants’ pronunciations. During the analysis process, it was found that two of eight participants pronounced some words as if they were Turkish; these words are “program”, “transfer”, “sponsor”, “format”, and “internet”. The common characteristic of these words is that they are spelled the same way in both languages. On the other hand, a similar pattern was not observed in the pronunciation of the words that are not identical in spelling. Instead when producing the words “category”, “analyze”, “exercise”, “document”, “potential”, the participants transferred only certain L1 sounds. For example, when producing the word “category” (kætəgɔri), they substituted /æ/ with /ɑ/. Similarly, for the word “analyze” (ˈænləaɪz), they substituted first two vowel sounds with /ɑ/ and /e/ respectively. Additionally, the majority of participants transferred /g/ from L1 (egzersiz) when producing the word “exercise” and similarly, /ɑ/ sound which occurs in “document” and “conference” was substituted with /o/ as in Turkish “dokuman” and “konferans”.

4.5 Summary

In this chapter the results of the data obtained from participants were reported. This chapter first presented the demographic information of the participants and then descriptive statistics were reported for all the findings. Then the results from the study were presented in the light of each research question previously posed.

The analysis of participants’ pronunciations of the target words showed that the Turkish doctoral student-participants enrolled at Florida State University have a range of

pronunciation levels of the selected English words. The results obtained from the data analysis indicated that the participants' pronunciations of the selected target words were over the mid-point 3. In addition to this, results revealed that the participants' pronunciations were ranked more native-like when the words were isolated. Similarly, the participants' pronunciations of selected English words that are spelled the same in Turkish were ranked more native-like than the words spelled differently in Turkish. Additionally, the participants substituted the English specific sound /æ/ as in "category" and "analyze" with the closest Turkish sound /a/. Finally, they also substituted the sound /a/ as in "document" and "conference" with Turkish sound /o/.

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

The present study has explored Turkish speakers' English pronunciation of words that also exist in Turkish as loanwords from Indo-European languages. It has also investigated the extent to which Turkish speakers of English transfer from their L1 sound system when they pronounce the English words. In order to achieve these goals, first, Turkish speakers' pronunciation of the English words has been rated by two raters and later analyzed to identify the sounds they transferred from their L1. Results obtained from the rating process suggest that none of the speakers were able to pronounce all the target words without some level of transfer. The participant who received the highest rating was the only speaker who received a course on English pronunciation. This finding is consistent with the findings from Lord's (2005) study where the pronunciation of adult learners of Spanish improved dramatically after 10 weeks of explicit instruction on Spanish phonology.

A brief contrastive analysis of Turkish and English sound systems has been carried out to identify the possible sources of transfer from the L1 sound system. According to this analysis, English interdental consonants [θ] and [ð]; velar approximants [w] and [ɹ] do not occur in Turkish. Therefore Turkish speakers may have difficulty producing these sounds and they may substitute them with the Turkish sounds

[t], [d], [v], and [r] respectively. Additionally, English lax vowel sound [æ] is among the sounds that do not occur in Turkish. Due to its absence from Turkish sound system, Turkish speakers are likely to substitute [æ] with the closest Turkish vowel sounds [e] or [ɑ].

The analysis of the speakers' transfer from the L1 showed that the participants had difficulty with the aforementioned English specific sounds. Moreover, they substituted them with the L1 sounds that are similar to the target sounds. This finding supports the moderate version of contrastive analysis hypothesis which claims that when the sounds are similar, speakers are more likely to perceive and produce the target sounds as L1 sounds. Additionally the participant who received the highest scores was consistently able to pronounce the sounds that are considered problematic for Turkish speakers. For example, he did not have difficulty with the English specific sound /th/ when pronouncing the words "method" and "theory". He also accurately pronounced the English lax vowel [æ] as in the selected English word "category". It is assumed that the explicit instruction the participant received on English phonology may have contributed to his accuracy in the pronunciation of English specific sounds. This finding is concordance with the findings from a study by Bongaerts et al (1995, 1997). According to Bongaerts et al., Dutch adult learners of English who received explicit instruction on English phonology achieved nativelike proficiency in terms of production of the English specific sounds that do not exist in Dutch.

However, the major finding of this study indicates that not all the transfer errors resulted from the interaction between the L1 and L2 sound systems, and the prior experience with the pronunciation of the target words in the L1 also caused changes in

the pattern of transfer. For example, out of eight participants six pronounced the word 'exercise' as e[g]ercise. In Turkish /x/ occurs as a combination of /k/ and /s/ in words such as 'eksen'(axis), 'eksi'(minus); therefore it is assumed that this should not cause any confusion or difficulty to the speakers. However, with the word 'exercise' (egzersiz) it is evident that the transfer occurs as a result of the participants' prior experience with the target word.

Finally, all the participants, except one, experienced difficulty pronouncing the word 'category'. They either substituted lax vowel [æ] with [ɑ] or the consonant [t̪] with [t] which is aspirated in Turkish. As this finding suggests, when multiple L2 specific sounds occur in the same environment, it could be more difficult for speakers to produce all of these sounds authentically.

The findings of this study revealed that Turkish adult speakers experience difficulty with the pronunciation of English specific sounds [θ, ð, w, ɹ, t̪, æ]. Additionally, results showed that prior experience with the words in the native language may result in different patterns in the transfer of the native language sounds. Furthermore, the findings indicated that it is essential for adult learners to receive explicit instruction on the second language phonology/pronunciation to be able to successfully acquire the target language sounds. Language teachers who teach Turkish learners could benefit from the results of this study to address the pronunciation difficulties and create explicit teaching materials to address these difficulties in classrooms.

Considering the fact that the sample of this study was limited to 8 participants and only 21 loanwords have been used to assess learners' English pronunciation, it is

evident that more research should be conducted on this matter. The findings from this study could be validated through a future research with larger sampling groups. Also it is recommended that a larger number of loanwords should be used in order to obtain more detailed information regarding the transfer patterns that occur in the pronunciation of loanwords. Additionally, conducting a similar study with native speakers of other languages who learn English as a second language could also contribute to the validity of the findings of the present study.

APPENDIX A

HUMAN SUBJECTS COMMITTEE APPROVAL LETTER

Office of the Vice President for Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 09/12/2012

To: miray varol
Address: 2208M STB MC:4459
Dept.: EDUCATION

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
The Effect of First Language on Second Language Pronunciation

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Expedited per 45 CFR § 46.110(7) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 09/11/2013 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.

Cc: mariko haneda, Advisor
HSC No. 2012.8848

APPENDIX B

QUESTIONNAIRE

Pseudonym: _____

1) What is your gender?

a) Female b) Male

2) How old are you?

3) At what age did you begin learning English?

4) Do you speak any other languages? If yes, which ones?

5) How long have you been living in the U.S.?

6) Did you attend any English Institution before graduate school? If yes, for how long?

7) Have you ever had a native speaker conversation partner? For how long?

8) Do you mostly speak Turkish or English outside of school?

9) Do you think interacting with mostly Turkish people affect your English speaking skills? If yes, what difficulties does it cause?

10) Have you ever visited any other countries where English is spoken by the majority? If yes, how long did you stay?

11) Have you taken any courses on English phonology and pronunciation?

12) Could you please describe the English classes you attended in your country? What do you think should be improved regarding the second language instruction?

13) Do you think English pronunciation is hard for Turkish speakers? Why?

14) Are there any specific words in English that you think you will never be able to pronounce correctly? If so, please list them?

APPENDIX C

SELECTED ENGLISH WORDS AND SENTENCES

Sentences:

1. What program did you use to make this movie?
2. FSU has a very large campus!
3. Have you met the new transfer student?
4. My conversation partner is from Colombia.
5. Is the internet included in the rent?
6. What model are you planning to use for your project?
7. I'm collecting data for my study.
8. Who sponsored this research?
9. What do you think about Obama's healthcare system?
10. I just finished the method section of my paper.
11. I watched a documentary about evolutionary theory.
12. I really like the saying "Every friend is a potential enemy and every enemy is a potential friend."
13. How do you say category in Spanish?
14. I'm so excited about the TESOL Conference this year.
15. My brother is planning to change his major from graphic design to computer programming.
16. Is there a problem with the ERIC website? It is not opening.
17. The APA format is very confusing to me.
18. Have you done the exercises in the course book?
19. I loved the new 'the Perspective' cover?
20. I need to renew my immigration documents by next month.

21. The analyze button is my best friend on SPSS.

Target Words:

1. program
2. campus
3. transfer
4. partner
5. internet
6. model
7. data
8. sponsor
9. system
10. method
11. theory
12. potential
13. category
14. conference
15. graphic
16. problem
17. format
18. exercise
19. perspective
20. document
21. analyze

APPENDIX D

CONSENT FORM

FSU Behavioral Consent Form
Effect of First Language on Second Language Pronunciation

You are invited to be in a research study of the Effect of First Language on Second Language Pronunciation. You were selected as a possible participant because you are a doctoral student at Florida State University and speak Turkish as your first language. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Miray Varol, School of Teacher Education at College of Education at The Florida State University.

Pronunciation is considered to be one of the biggest challenges in second language acquisition; especially by adult speakers because maturational constraints make it harder for adult learners to effectively produce some second language specific sounds. Another factor that impacts this process is the type of interaction between first and second language. The purpose of this study is to examine the Turkish adult speakers' pronunciation of English words that have also been integrated into Turkish. I'm especially interested in how Turkish, as a first language, affects this pronunciation acquisition process.

If you agree to be in this study, we would ask you to do the following things: First, you will fill out a questionnaire where you will answer questions about you age, gender, languages you speak, your English learning experience...etc. No sensitive questions are asked on this questionnaire. After filling out the questionnaire, I will ask you to pronounce 16 English words for me, and then read 16 sentences. You will be audio-recorded during this task. It will take you approximately 15-20 minutes to answer the questionnaire and complete the pronunciation task.

I do not anticipate any risks for you participating in this study, other than those encountered in day-to-day life. The participation in this study will not cost you anything than your time. I do not anticipate any personal benefits for you participating in this study. Also, no compensation will be offered.

The records of this study will be kept private and confidential to the extent permitted by law. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the P.I. and the rater will have access to the audio recordings. The recording will be destroyed in two years after the study is conducted.

Participation in this study is strictly voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

FSU Human Subjects Committee approved on 9/12/2012. Void after 9/11/2013. HSC # 2012.8848

The researcher conducting this study is Miray VAROL. You may ask any questions you have now. If you have any questions, later, concerning this research study or your participation in this study, please contact me, by phone (██████████) or e-mail (██████████). You may also contact my advisor Dr. Mariko Haneda, by phone (850-644-4880) or e-mail (mhaneda@fsu.edu).

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the FSU IRB at 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742, or 850-644-8633, or by email at humansubjects@magnet.fsu.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature

Date

Signature of Investigator

Date

FSU Human Subjects Committee approved on 9/12/2012. Void after 9/11/2013. HSC # 2012.8848

REFERENCES

- Aoyama, K., Flege, J. E., Guion, S. G., Akahane-Yamada, R., & Yamada, T. (2004). Perceived phonetic dissimilarity and L2 speech learning: The case of Japanese/r/and English/l/and/r. *Journal of Phonetics*, 32(2), 233-250.
- Baker, W., Trofimovich, P., Flege, J. E., Mack, M., & Halter, R. (2008). Child—Adult Differences in Second-Language Phonological Learning: The Role of Cross-Language Similarity. *Language and Speech*, 51(4), 317-342.
- BALPINAR, Z. (2011). *Turkish phonology, morphology and syntax*. Anadolu Universitesi. Eskisehir, Turkey.
- Bohn, O., & Flege, J. E. (1992). The Production of New and Similar Vowels by Adult German Learners of English. *Studies in Second Language Acquisition*, 14(2), 131-158.
- Bongaerts, T., Planken, B., & Schils, E. (1995). Can late starters attain a native accent in a foreign language? A test of the critical period hypothesis. *The age factor in second language acquisition*, 30-50.
- Bongaerts, T. Chantal van Summeren, Brigitte Planken & Eric Schils (1997) Age and ultimate attainment in the pronunciation of a foreign language. *Studies in Second Language Acquisition*, 19, 447-65.
- Derwing, T. M., & Munro, M. J. (2005). Second Language Accent and Pronunciation Teaching: A Research-Based Approach. *Tesol Quarterly*, 39(3), 379-397.
- Eckman, F. R. (2004). From phonemic differences to constraint rankings: Research on second language phonology. *Studies in Second Language Acquisition*, 26(04), 513-549.
- Flege, J., Frieda, A., & Nozawa, T. (1997). Amount of native-language (L1) use affects the pronunciation of an L2. *Journal of Phonetics*, 25, 169-186.

- Flege, J. E., Birdsong, D., Bialystok, E., Mack, M., Sung, H., & Tsukada, K. (2006). Degree of foreign accent in English sentences produced by Korean children and adults. *Journal of Phonetics*, 34(2), 153-175.
- Flege, J. E., & Liu, S. (2001). The effect of experience on adults' acquisition of a second language. *Studies in Second Language Acquisition*, 23(4), 527-552.
- Flege, J. and MacKay, I (2011). What accounts for “age” effects on overall degree of foreign accent? In M. Wrembel, M. Kul and Dziubalska-Kolaczyk, K. (Eds) *Achievements and perspectives in the acquisition of second language speech: New Sounds 2010*, Vol. 2, Bern, Switzerland: Peter Lang, Pp. 65-82.
- Flege, J. E., Schirru, C., & MacKay, I. R. (2003). Interaction between the native and second language phonetic subsystems. *Speech communication*, 40(4), 467-491.
- Hammarberg, B. (1988). *Studien zur Phonologie des Zweitsprachenerwerbs*. [Studies in the phonology second language acquisition]. (Acta Universitatis Stockholmiensis, Stockholmer Germanistische Forschungen 38.) Stockholm: Amqvist & Wiksell International.
- International Phonetic Association. (1999). *Handbook of the International Phonetic Association: A guide to the use of the International Phonetic Alphabet*. Cambridge University Press.
- Jia, G., & Aaronson, D. (2003). A longitudinal study of Chinese children and adolescents learning English in the United States. *Applied Psycholinguistics*, 24(01), 131-161.
- Lado, R. (1957). *Linguistics Across Cultures: Applied Linguistics for Language Teachers*. Ann Arbor: University of Michigan Press.
- Lenneberg, E. H. (1967). *Biological foundations of language*. Wiley, ISBN 0-89874-700-7.
- Major, R. C. (2001). *Foreign accent: The ontogeny and phylogeny of second language phonology*. Lawrence Erlbaum.
- McAllister, R., Flege, J. E., & Piske, T. (2002). The influence of L1 on the acquisition of Swedish quantity by native speakers of Spanish, English and Estonian. *Journal of phonetics*, 30(2), 229-258.

- Moyer, A. (1996). Ultimate attainment in second language phonological acquisition: Evidence from adult learners of German. Unpublished doctoral dissertation, University of Texas at Austin.
- Moyer, A. (1999). Ultimate attainment in L2 phonology. *Studies in second language acquisition*, 21(1), 81-108
- Munro, M. J., & Derwing, T. M. (1995). Foreign accent, comprehensibility, and intelligibility in the speech of second language learners. *Language learning*, 45(1), 73-97.
- Munro, M., Flege, J., & MacKay, I. (1996). The effect of age of second-language learning on the production of English vowels. *Applied Psycholinguistics*, 17, 313-334.
- Oller, J. W., & S. M. Ziahosseiny (1970). The Contrastive Analysis Hypothesis and Spelling Errors. *Language Learning*, 20, 183-189.
- Penfield, W., & Roberts, L. (1959). *Speech and brain mechanisms*. Princeton University Press, Princeton, N.J.
- Patkowski, Mark S. (1980) The sensitive period for the acquisition of syntax in a second language. In: *Language Learning* 30/80, 449-472.
- Scovel, T. (1988). *A time to speak: A psycholinguistic inquiry into the critical period for human speech*. Cambridge MA: Newbury House.
- Snow, C. E., & Hoefnagel-Höhle, M. (1977). Age differences in the pronunciation of foreign sounds. *Language and Speech*, 20(4), 357-365.
- Trofimovich, P., & Baker, W. (2006). Learning second language suprasegmentals: Effect of L2 experience on prosody and fluency characteristics of L2 speech. *Studies in Second Language Acquisition*, 28(01), 1-30.
- Yamada, R. A. (1995). Age and acquisition of second language speech sounds: perception of American English /r/ and /l/ by native speakers of Japanese. W Strange (Ed.), *Speech perception and language experience: issues in cross-language research*, York Press, Baltimore, MD (1995), pp. 305-320.
- Wardhaugh, R. (1970). The Contrastive Analysis Hypothesis. *TESOL Quarterly*, 4, 120-130.

BIOGRAPHICAL SKETCH

Miray Varol was born in 1985, in Zonguldak, Turkey. She earned her Bachelor of Arts degree in English Language and Literature in 2007 at Canakkale 18 Mart University in Turkey. In 2010 she joined the Foreign and Second Language Teaching Master's program at the Florida State University where she is currently a graduate student.

Miray Varol's research interests are the acquisition of second language pronunciation, and the teaching of the target culture in foreign language classrooms.

After graduating from the Florida State University with a Master's degree, Miray Varol is planning to teach college level English courses in Turkey.