An Analysis of Lexical Stress in English Pronunciation of Indo-European Words Loaned to Turkish by Turkish Speakers of English[1]

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Abstract

This study investigated lexical stress placement in English pronunciation of Indo-European words loaned to Turkish by Turkish speakers of English. We aimed to increase awareness of prosodic features since misusage of primary stress causes breakdowns in communication. The sample consists of 20 students in the ELT Department of a public university in Turkey and 10 native English speakers. The non-native speakers were divided into two groups for the purpose of observing the effect of treatment on lexical stress patterns of English. The participants were asked to read 30 tokens in isolation and in sentences while their speech were being recorded. The audio files were analyzed through Praat to determine where the participants placed primary stress. The accuracy of primary stress placement for each word was determined according to IPA transcriptions. The findings of the study revealed that there is a statistically significant difference in the accuracy of primary stress placement between native speakers and Turkish speakers of English. Negative L1 transfer was detected in the placement of lexical stress in the recordings of Turkish participants. The results showed that the participants receiving the treatment made significant progress. Furthermore, no statistically significant difference was found between isolated and in-sentence utterances. The findings of this study can serve as a tool for language teachers to create materials and effective resources that eliminate these difficulties for NNSs at any level of language education.

Keywords: *Lexical stress, Loanword, Prosodic features, Stress.*

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[1] *This article was extracted from an MA thesis, written by the first and supervised by the second author*

Türkçede Bulunan Hint-Avrupa Dil Ailesine Ait Kelimelerin İngilizce Konuşan Türkler Tarafından İngilizce Telaffuzunda Sözcük Vurgusu Analizi

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Öz

Bu çalışma, Türkçe konuşanlar tarafından Hint-Avrupa dil ailesinden Türkçeye geçen kelimelerin İngilizce telaffuzundaki sözcük vurgusu yerleşimini incelemiştir. Odaksıl vurgunun yanlış kullanılması iletişimde bozulmalara neden olabileceğinden, bürünsel özellikler konusunda farkındalığın arttırılması amaçlanmıştır. Bu araştırmanın örneklemini Türkiye'deki bir devlet üniversitesinin İngilizce Öğretmenliği Bölümünden 20 öğrenci ve ana dili İngilizce olan 10 katılımcı oluşturmaktadır. Türk katılımcılar, İngilizcenin sözcük vurgusu kalıpları üzerine verilen eğitimin etkilerini gözlemlemek amacıyla iki gruba ayrılmıştır. Katılımcılardan konuşmaları kaydedilirken 30 aktarma sözcüğü tek tek ve cümle içerisinde okumaları istenmiştir. Katılımcıların odaksıl vurguyu nereye koyduğunu belirlemek için ses dosyaları Praat aracılığıyla analiz edilmiş, her bir kelime için odaksıl vurgu yerleşiminin doğruluğu IPA transkripsiyonlarına göre belirlenmiştir. Çalışmanın bulguları ana dili İngilizce olanlar ile Türkçe olanlar arasında odaksıl vurgunun yerleştirilmesinde istatistiksel olarak anlamlı bir fark olduğunu ortaya koymuştur. Türk katılımcıların odaksıl vurgu yerleşiminde negatif yönlü aktarım olduğu belirlenmiştir. Eğitimi alan katılımcıların önemli bir ilerleme kaydettiği görülmüştür. Yapılan analizler sonucunda izole edilmiş kelimeler ile bu kelimelerin cümle içerisindeki kullanımları arasında vurgu yerleşimi bakımından istatistiksel olarak anlamlı bir fark bulunamamıştır. Bu çalışmanın bulguları, dil öğretmenlerinin, her seviyedeki öğrencilerine bu zorlukları ortadan kaldıracak etkili kaynaklar ve materyaller oluşturmaları için bir araç olabilir

Anahtar Kelimeler: *Sözcüksel vurgu, Aktarma kelime, Bürünsel özellikler, Vurgu*

Introduction

The number of non-native speakers of English is growing day by day and outnumbers that of native English speakers. The effective learning and teaching of English as a foreign or second language is still an important issue of concern for learners, educators as well as scholars. Although the phenomenon has changed from perfectly used native-like language to "legitimate discourse" of Bourdieu (1997) throughout the late 20th century and later to term English as a Lingua Franca (ELF), pronunciation still maintains its importance for intelligible discourse. According to Bourdieu (1977), 'legitimate' pronunciation is associated with being intelligible and acceptable in the target language. As the intelligibility and comprehensibility of speech also depend on pronunciation, the demand for second/foreign language speakers to learn proper pronunciation is growing on a daily basis. Besides, most learners consider having a native-like pronunciation an indicator of their language proficiency.

Pronunciation was ignored by educators until the audio-lingual method emphasized listening and speaking. Derwing and Munro (2005, p.379) explain one of the reasons why pronunciation instruction was missing in language classes saying the study of pronunciation is a field of applied linguistics. On that account, most of the findings about this issue have been reported by linguists rather than language educators. On the other hand, Communicative Language Teaching (CLT) has strongly changed the emphasis to the communicative use of suprasegmentals and the importance of pronunciation teaching. As Richards and Rodgers (2001) suggest, CLT aims to use language features as effectively and appropriately as possible. It underlines that in foreign language classrooms, speech should be more communicative, intelligible and comprehensible (Derwing and Munro, 2009). According to Celce-Murcia, Brinton, and Goodwin (2010), CLT mainly focuses on intelligibility and comprehensibility of language used which is closely related to communicative skills rather than full correctness and native-like speech. Improving learners' communicative competence is the main goal in the communicative approach.

In the past few decades, suprasegmental features in pronunciation have attracted more and more researchers' attention and stress in loanwords is a relatively intact area for scholars. During the acquisition of suprasegmental

features such as stress, pitch and tone, properties of native language affect target language features. Oller and Ziahosseiny (1970) proposed that as the amount of similarity between the two languages increases, it creates difficulty for learners. In the context of pronunciation, acquiring suprasegmental features such as stress patterns are one of the challenging areas for non-natives. Eckman, Elreyes, and Iverson (2003) present supporting results suggesting that the less different the L2 sound system is, the more trouble learners have in production. Essentially, stress is a vital component of pronunciation and Oxford Dictionary ("stress", n.d) defines it as the emphasis given to a particular phonological element to single it out within other elements in speech, specifically via a blend of relatively greater loudness, higher pitch, and longer duration. Cutler (1983) lays emphasis on word stress by pointing out that misplaced stress aside from ungrammatical sentences and inaccurate articulation of the sounds can also cause breakdowns in communication. It is shown that native listeners need longer processing time to understand misplaced word stress and as a result, they miss some part of the message in order to decode the wrongly stressed word (Cutler and Clifton, 1984). Regarding this, Benrabah (1997) found that native speakers focus on word stress patterns to determine the mis-stressed words instead of listening to the segments, which causes breakdowns in communication. It is concluded that learners should concentrate on word stress rather than correctly pronounced sounds or fully correct segments.

When loanword phonology is considered, adaptation of stress is not straightforward. Using the L2 words with minimal phonological differences pose a challenge for learners to switch between the stress patterns of the two languages. This situation makes stress teaching a debatable issue as well. Jenkins (2002, p.97) claims that word stress is not teachable due to its complexity and does not affect the intelligibility of the utterance. On the contrary, empirical studies argue that in English, there are a limited number of rules that can be applied to polysyllabic words (Dauer, 2005) and "nearly every word in English can be assigned stress by using one of four simple rules" (Dickerson, 1994, p.25), making the teaching of lexical stress valid and applicable.

The studies mentioned above show that lexical stress in loanwords is a fertile research area. The studies in this area mostly deal with the detection of the differences or similarities in donor and borrowing languages (Aktaş, 2015;

Varol, 2012; Kang, 2010; Fenyvesi and Zsigri, 2006). The further studies conducted by Demirezen (2009, 2010a, 2010b, 2012a, 2012b & 2016) suggests that explicit instruction on lexical stress for ELT students is very crucial and it can be given through a special training program with specifically prepared materials concerning this issue. However, to the best of our knowledge, there is not any study which is concerned with both lexical stress differences on loanwords between native and non-native speakers of English and also eliminating these differences on stress patterns in the context of Turkey, which is a gap in the literature. The present study is in the field of English Language Teaching (ELT) where the results can be implemented in the teaching of English. In this study, there are two phases: the first one is to describe the difference on the stress patterns of loanwords between native and non-native speakers of English. Secondly, it tries to find out whether it is possible to teach native speaker lexical stress norms to English as Foreign Language (EFL) learners. As Orion (1997) states "making the correct syllable stress in a word creates a rhythm that directly affects the pronunciation of that word and its comprehension" (p. 20), it is crucial for language teachers to use accurate stress patterns since their language use is directly taken as a model by their students.

There is need for more practical findings in order to use them in further ELT experiences. Therefore, this study aims to add to the existing literature of foreign language learners' pronunciation acquisition. The findings of this study might have implications for both materials development and language teaching. The results can serve as a tool for language teachers to better understand their students' needs and also to develop materials or techniques.

For the mentioned purposes, this study will address the following research questions:

1. Is there any significant difference in primary stress placement of the selected loanwords between native speakers and Turkish speakers of English?
2. Do lexical stress patterns of loanwords change if they are uttered in isolation or in sentences?
3. If there are any differences, to what extent does a treatment on stress patterns of English eliminate these differences?

Theoretical Framework

English and Turkish Lexical Stress Patterns in Contrast

In comparing and contrasting Turkish and English languages, it is observed that they differ in almost every area of the language such as articulation, syntax, phonetics, and stress and intonation patterns. The nature of Turkish as a syllable-timed language (Çelik, 2007) and English as a stress-timed language (Harmer, 2001) causes non-native learners of English some difficulties or leads to neglect of stress patterns resulting in misunderstandings or communication breakdowns.

In English, there is one stressed syllable in a two or more syllable word. It is possible to find three types of stress in a long word; a primary stressed syllable, a secondary stressed syllable and unstressed ones. When lexical stress patterns in English are considered, Celce-Murcia, Brinton, and Goodwin (1996, p.133) suggest that words originating from Germanic and Latin roots have stress on the first syllable as in 'water /ˈwɔː.tər/' and 'doctor /ˈdɒk.tər/ '. In addition, bisyllabic verbs tend to have primary stress on the second syllable as in 'attack /əˈtæk/' and 'present /prɪˈzent/'. Suffixation is another feature for determining the placement of stress. Germanic origin prefixes such as a-, be-, for-, fore-, mis-, out-, over-, un-, under-, up-, and with- and Latin origin such as com-, de-, dis-, ex-, en-, in-, ob-, per-, pre-, re-, sub-, and sur- as in 'surprise /səˈpraɪz/' make the root of the word stressed while words with suffixes of German origin such as -en, -er, -ful, -hood, -ing, -ish, -less, -ly, and -ship has the stress on the root as in 'childhood /ˈtʃaɪld.hʊd/ and with suffixes of French origin such as -aire, -ee, -eer -ese, -esque, -ique,-eur/euse,-oon, -ette, -et , stress tends to be on the final syllable of the word as in 'questionnaire /ˌkwes.tʃəˈneər/' (Celce-Murcia, Brinton and Goodwin 1996, p. 133-135). Words ending in –ic, -sion, and -tion has stress on the penultimate syllable, however words ending in –cy, -ty, -phy, -gy and –al has ante-penultimate syllable stress as in 'democratic /ˌdem.əˈkræt.ɪk/' and 'democracy /dɪˈmɒk.rə.si/'. Demirezen and Sarıçoban (2008) find that stress mobility is a problematic area for Turkish EFL learners, and they describe it as "when a word is enlarged by the addition of prefixes, word-forming suffixes, inflectional and derivational suffixes" (p. 740). This kind of mobility may end up with changes in stress

placement as explained and exemplified above. As Demirezen (2010a) suggests as result of stress mobility, vowels can reduce into schwa /ə/ phoneme. This situation is also called as phonemic decay or vowel reduction which can be defined as a change in vowels in a word. When stress mobility occurs in words, a primary stressed syllable loses its priority and becomes secondary stress or unstressed syllable.

Turkish, on the other hand, tend to have primary stress on the final syllable regardless of the number of the suffixes and the length of the words (Inkeles and Orgun, 1998). Recent studies have proven that not all words in Turkish have stressed final syllables; instead, there is a tendency of non-final stress in a remarkable amount of words (Kabak and Vogel, 2001; Van der Hulst, 1999; Inkelas and Orgun, 1998; Hayes, 1995; Sezer, 1983). Although there are different methods to determine the place of non-final stress in Turkish, the "Sezer rule" is accounted for the stress properties of borrowed words and place names. Loanwords in Turkish, contrary to the general belief, do not have the stress placement of the source language. This is explained by the Sezer Stress Rule requiring that in a non-final stress word, if the antepenultimate syllable is strong and the penultimate syllable is weak, the antepenultimate syllable is stressed; otherwise, the penultimate is stressed. Aktaş (2015) suggests that general rules of lexical stress placement do not cover all the words in the language. He studied on 11.351 loanwords in Turkish borrowed from 18 different languages. In his study, it was aimed to find out the stress placement of these loanwords in Turkish and in their native languages according to four parameters: words borrowed without changing the native language's stress pattern, words sharing the same stress properties with Turkish, words which are adapted to Turkish stress pattern, and the words do not carry both original and Turkish stress patterns.

Accordingly, since Turkish as a syllable-timed language has nearly the same pitch, length, and loudness on every syllable, this may create challenges while speaking English, a stress-timed language, in using the correct placement of stress for non-natives, as each syllable receives a different amount of time and stress in English. Lewis (2001) defines Turkish language as having oxytone words, that is having stress on the last syllable, and non-oxytones, which keep stress on the original syllable despite extension via suffixes (p. 21). He also indicates the differences between the two languages in terms of

morphological properties with an emphasis on agglutination which is unfamiliar for the speakers of English; Lewis states that "our English sentences are like drystone walls, with one chunk of meaning dropped into place after another. The Turk's ideas are laid in place like bricks, each cemented to the next (p. 20)". As stressed syllables in English words need to occur at equal time intervals and each syllable receives a different amount of time and stress unlike Turkish, non-native speakers of English whose mother tongue is a syllable-timed language, show tendency to apply the same amount of stress to each and every syllable or to implement the same stress placement as in Turkish when they pronounce the word in English.

The Age Factor

It is known that late learners of English as a Foreign Language have a foreign accent (Scovel, 1983; Sanders, Yamada & Neville, 1999). The age factor can be considered one of the reasons for this accent. In language acquisition, native-like level of proficiency requires an early age of exposure to the target language (Lenneberg, 1967). It is observed that late learners such as adults may learn the features more easily; however, they may struggle in native-like use of target language, whereas early learners may comprehend the features of the target language permanently, and be more successful in that language (Krashen, Long and Scarcella,1979). There are many studies that show a close relationship between the age of exposure to the target language and the language competency achieved in that language (Major, 2001; Newport, 1990; Krashen, Long, and Scarcella, 1982). The Critical Period Hypothesis (CPH) argues that language acquisition process is in its most efficient time starting from infancy or very early childhood to puberty (Lenneberg, 1967). With increased age of exposure, humans lose their ability or elasticity to acquire language features including syntactic and prosodic ones (Burke and Shafto, 2004; 2008).

According to Scovel (1988), because the pronunciation is directly physical, the critical period has a great effect on L2 pronunciation acquisition. Therefore, late learners maintain a foreign accent indicating their lack of competence on segmental (e.g. individual sounds) and suprasegmental (e.g. stress, intonation, rhythm) features of the target language. Studies have shown that late learners show deficits in acquiring the phonetic information although

they may retrieve information about lexical stress (Sanders, Yamada and Neville, 1999).

The fact that critical period has certain effects on pronunciation has been supported by a considerable amount of studies conducted in this area. Patkowski (1990) has found a high correlation between the age of first exposure to the target language and pronunciation accuracy. Moreover, learners who moved to the USA before the age of 15 were more native-like than those who moved after the age of 15. Similarly, Huang and Jun (2011) carried out a research on the age of arrival effect on the production of L2 prosody with Mandarin-speaking immigrants with varying ages of arrival in the US. Their results revealed that age has an effect on different aspects of prosody. They found statistically significant differences in the degree of target prosody, speech rate and frequency of pitch accents. Additionally, Saito (2015) conducted a cross-sectional research to examine the spontaneous speech of Japanese learners of English in Canada and concluded that the prosodic (word stress, intonation) and temporal (speech rate) qualities of the participants' speech were significantly predicted by their length of residence.

It should also be considered that age by itself cannot be the only factor affecting language acquisition. Accordingly, Flege and McKay (2011) suggest other factors such as the amount of L1 and L2 use, the quality and quantity of the input in the target language and the time spent in the target language environment.

Methodology

Research Design and Sampling

In this study, a quasi-experimental research design is used. In an experimental design, the researcherlooks for both existing differences between variables and the impact of a consciously altered variable on others (Johnson & Christensen, 2004). Therefore, the quasi-experimental design is appropriate for this research which seeks differences in primary stress placement of Turkish speakers of English and the purpose is to test whether use of primary stress of non-native speakers of English can be mitigated.

Table 1. Research Design of the Study

	Group	Pre-test	Treatment	Post-test
Native	Norm	Yes	No	No
Nonnative	Control	Yes	No	Yes
	Treatment	Yes	Yes	Yes

As seen in Table 1, the pretest-posttest design is used in this study. The participants were divided into three groups. The first group is called the Native Group (NG) including only native speakers of English, providing the lexical stress norms of native speakers. This group only took the pretest which enabled us to provide a norm to which the experimental and control groups were compared. The non-native participants were divided into the Treatment Group (TG) and Control Group (CG) in order to understand whether or not their lexical stress patterns can be changed with the purpose of increasing their awareness on lexical stress patterns. Both groups took the pretest and posttest; however, only the TG received the experimental intervention.

The sample of this study consists of 20 students majoring in English Language Teaching and 10 native English speakers. Non-native speakers were chosen from among the sophomore and junior students of the department through convenience sampling. Dörnyei (2007, p. 98) states that convenience or opportunity sampling is the most commonly used sampling type in L2 research. The participants were selected among the ones who met the purpose of the study, i.e. availability at a certain time and willingness to volunteer. The ages of the non-native participants ranged from 19 to 34. 18 females and 2 males were recruited to participate in the research on a voluntary basis. The Michigan English Placement Test (MEPT) was taken by all the nonnative participants to determine their language proficiency. Their proficiency levels varied between Lower Advanced and Advanced. The NNS were divided into two equal groups in terms of language proficiency. Therefore, the assignment of the NNSs participants into the TG and CG was done through purposeful sampling.

In this study, British, American and Canadian speakers who acquired English as a mother tongue and are living in their homeland were chosen on a voluntary basis. Audio records of 10 native participants whose ages ranged between 18 and 51 were analyzed in order to determine the native speakers' stress placement norms. There were 8 females and 2 males in the native group.

Instruments

Two different instruments were used for this experimental study. The instruments include the Michigan English Placement Test (MEPT) of which reliability tests for several test populations at the Intensive English Program at the University of Michigan and at a university in Japan have shown relatively high internal consistency (r = .89, .92, .89, .88), and a loanword list (See Appendix I) which consists of thirty Indo-European loanwords that Turkish and English share. The list is composed of two different parts. The first part includes a list of the 30 loanwords and the second part consists of 30 carrier sentences in which the words in the first section were placed (See Appendix II). All the sentences in the second section are authentic and taken from the British National Corpus. In the process of word selection, attention was given to the fact that the stress placement of the selected words was different in Turkish and English. Lexical stress placement of English words was determined via IPA phonetic transcriptions shown in the Cambridge Online Dictionary (n.d). Furthermore, the recordings of native English speakers were also used as a norm for these words.

Data Collection Procedures

The test material was given to all native and non-native participants to be read to tape. Before creating the CG and TG, the non-native participants were administered the MEPT in order to control for the differences caused by language proficiency. They were given 75 minutes to finish the exam. Once their exams finished, the participants were asked to read the words and sentences while their speech was audio-recorded as a pretest.

According to the MEPT results, the non-native participants were divided into the TG and CG which had equal proficiency levels, with the purpose of understanding whether EFL learners' lexical stress patterns could be changed in order to make their speech more native-like and create awareness on this issue. Both groups took the pretest and posttest; however, only the TG received the treatment.

The main purpose of the experimental intervention was to raise the participants' awareness of loanword stress patterns rather than creating a permanent change in their speech. Thus, the design of the treatment is based on

consciousness-raising. A 10-hour training program on loanword stress patterns of English was designed and applied. The TG was taken to training for two weeks. The meeting time was arranged in line with the participants' schedules. The instructions on stress patterns of English, primary stress placement in English, and stress patterns of loanwords in English were given in the four hours of the program with the aim of teaching basic stress patterns in English. In this section video lessons from YouTube uploaded by JenniferESL (n.d) and Rachel's English (2011) were used along with instruction given by the researchers. Three hours of the training was devoted to consciousness-raising activities such as listening to pronunciation of loanwords in isolation and in sentences through audio sections of dictionaries and listening to the data gathered in the pretest identifying the stress placement of the native and non-native speakers in order to raise awareness of the participants on the issue in question. In the last three hours, the participants had time to practice with words and sentences, and discuss the lexical stress patterns in English, which helped them to gain automaticity to use these patterns.

In this section, some listening activities were applied. The participants were expected to detect the stressed syllable from the sentence or the isolated word they heard. Also, some online games provided by Oxford University Press' Project Fourth Edition and word stress activities which can be found on roadtogrammar.com and EnglishClub websites were used to practice the primary stress placement as well.

Data Analysis

 The quantitative data collected for the current study were analyzed using Praat (Boersma, and Weenink, 2007) and SPSS. Acoustic analyses for prosodic features were carried out through a computer program named Praat in order to define the pitch levels of different syllables from the audio-recorded data.

After the measurement of the pretest and posttest means from Praat, statistical analyses were performed. Normality tests, paired-samples t-tests, and one-way ANOVAs were applied to compare the results of the groups, regarding the results of pitch levels of the loanwords in isolation and in sentences.

Findings

Findings Related to the First Research Question: Is there any significant difference in primary stress placement of the selected loanwords between native speakers and Turkish speakers of English?

Normality test results showed that the data was normally distributed with the skewness statistic -.59 for isolated word measurements and -.069 for in-sentence measurements while kurtosis statistics were -1.256 for isolated word measurements and -.719. George and Mallery (2014) states that skewness and kurtosis values between -1 and +1 are excellent for most psychometric purposes, whereas values between -2 and +2 are acceptable, depending on your application. To answer this research question, two one-way ANOVAs were conducted to observe any potential differences between the native speakers in the NG and the non-native speakers in the TG and CG for both isolated word measurements and in-sentence measurements. The findings are displayed in Tables 2 and 3:

Table 2. Descriptive Statistics for the One-Way ANOVA Groups

	N	$\bar{x}$	S
Native (NG)	10	26.60	1.90
Non-native (TG)	10	10.20	6.05
Non-native (CG)	10	11.60	5.54

Table 2 indicates that NG placed the stress more accurately than the non-native speakers with a mean of 26.60. Furthermore, it can be interpreted that the non-native groups were relatively equal with the relative means of 10.20 and 11.60.

As Table 2 shows, the superiority of the NG is observable. Further analysis was conducted through Scheffe PostHoc test to find out the specific significant differences between groups. The results are presented in Table 3 below:

Table 3. Analysis of Variance for Isolated Word Measurements

	Sum of Squares	df	Mean Square	F	P	Scheffe PostHoc
Between groups	1653.067	2	826.533			
Within groups	638.400	27	23.644	34.957	.000	NG>TG, NG>CG
Total	2291.467	29				

NG: Native Group TG: Treatment Group   CG: Control Group

The findings of the one-way ANOVA display a statistically significant difference between groups (F, 34.957 = .000, p < .001). The Scheffe PostHoc test conducted to see inter-group differences shows that the native speaker participants ($\bar{x}$ = 26.60) place lexical stress more accurately than the nonnative participants in the TG ($\bar{x}$ = 10.20) and CG ($\bar{x}$ = 11.60).

Since our data analysis procedure has two phases which are isolated word measurements and in-sentence measurements, the same processes above were performed for in-sentence measurements. Tables 4 and 5 demonstrate the results.

A one-way ANOVA was conducted to find out the differences among groups for in-sentence measurements. The findings are displayed in Table 4 below:

Table 4. Descriptive Analysis of Differences between Native Speakers and Non-Native Speakers for In-Sentence Measurements

	N	$\bar{x}$	S
Native (NG)	10	23.40	3.27
Non-native (TG)	10	14.20	4.98
Non-native (CG)	10	13.50	3.92

As can be seen from Table 4, the NG ($\bar{x}$ = 23.40) outperformed the TG ($\bar{x}$ = 14.20) and CG ($\bar{x}$ = 13.50) in terms of their lexical stress placement in sentences. Similar to the results of isolated word measurements, the mean of native speakers was greater than the means of the TG and CG, while non-natives (TG, $\bar{x}$ = 14.20 and CG, $\bar{x}$ = 13.50) had similar scores. The Scheffe PostHoc test was performed to figure out the significant difference between groups (See Table 5).

Table 5. Analysis of Variance for In-Sentence Measurements

	Sum of Squares	df	Mean Square	F	P	Scheffe PostHoc
Between groups	610.467	2	305.233			NG>TG, NG>CG
Within groups	458.500	27	16.981	17.974	.000	
Total	1068.967	29				

NG: Native Group TG: Treatment Group CG: Control Group

According to the one-way ANOVA results for in-sentence measurements shown in Table 5, the difference between the means of three groups was sta-

tistically significant (F, 17.974 = .000, p < .001). The PostHoc test shows statistically significant differences between the NG and TG as well as NG and CG, in favor of the NG in both cases.

As the analysis displays, there was a significant difference in the means of the three groups and the NG had superiority over both the TG and CG for isolated word measurements and in-sentence measurements. As seen above, the non-natives had similar scores when they read the words both in isolation and in-sentence in the administration of word readings as a pre-test.

Findings Related to the Second Research Question: Do lexical stress patterns of loanwords change if they are uttered in isolation or in sentences?

This research question aims to find out if there is any difference on primary stress placement of loanwords when they are uttered in isolation or in sentences. To answer this research question, all the participants' pre-test scores were analyzed and the findings are presented in Table 9:

***Table 9. Summary of the Independent Samples T-Test for the Isolated Word Measurements
and In-Sentence Measurements of the Participants***

Group	N	M	SD	df	t	p
Isolation	30	16.13	8.89	29	-.745	.462
Sentence	30	17.03	6.07			

Table 9 shows that there is no statistically significant difference between isolated word measurements and in-sentence measurements of the whole group of participants (N = 30) (t(9) =–1.482, p>.05), which indicates that lexical stress placement does not vary according to whether the word is uttered in isolation or in a sentence.

Findings Related to the Third Research Question: If there are any differences, to what extent does a treatment on stress patterns of English eliminate these differences?

This research question aimed to investigate whether an intervention to increase non-native speakers' awareness can help them to improve their pronunciation on suprasegmental level and sound more native-like. To answer the present research question, an independent samples t-test was used to

compare the post-test results of TG and CG and two paired-samples t-tests were performed to determine whether there was a statistically significant difference within each group between the pre-test and post-test. Tables 6, 7 and 8 exhibit the results:

Table 6. Independent Samples T-Test Results for the Post-Test Findings on Primary Stress Placement in Isolation and In-Sentences between the TG and CG

	Group	N	M	SD	df	t	P
Iso post-test	Treatment	10	21.00	4.52	18	3.066	.007
	Control	10	14.50	4.95			
Sent post-test	Treatment	10	19.10	5.47	18	1.504	.150
	Control	10	15.50	5.23			

As the results presented in Table 6 show, when the post-test results were compared, it is possible to conclude that there is a statistically significant difference between the TG ($\bar{x}$ = 21.00, SD = 4.52) and the CG ($\bar{x}$ = 14.50, SD = 4.95) for isolated word measurements (p < .01). However, no statically significant difference (p >.05) was obtained between in-sentence post-test results of the TG ($\bar{x}$ = 19.10, SD = 5.47) and the CG ($\bar{x}$ = 15.50, SD = 5.23).

Paired samples t-tests were conducted to determine whether an intervention could make any improvement on learners' usage of stress patterns. One of the paired samples t-tests was performed to see the improvement of the TG after the provided treatment. Table 7 shows the findings:

Table 7. Summary of the Paired Samples T-Tests for the TG

	Group	N	M	SD	df	t	P
Isolation	Pre-Test	10	10.20	6.05	9	-5.245	.001
	Post-Test	10	21.00	4.52			
In-Sentence	Pre-test	10	14.20	4.98	9	-2.889	.018
	Post-Test	10	19.10	5.47			

In Table 7, paired samples t-test results indicate a statistically significant difference between the pre-test and post-test scores of the TG. For isolated-word measurements, the TG statistically significantly improved with the help of the treatment given after the pre-test ($\bar{x}$ = 10.20, SD = 6.05) and had higher scores on the post-test ($\bar{x}$ = 21.00, SD = 4.52) (t(9) = -5.245 p <.05). Similar results can be seen for in-sentence pre-test ($\bar{x}$ = 14.20, SD = 4.98) and post-test scores of the participants ($\bar{x}$ = 19.10, SD = 5.47). It can be concluded that the TG responded to the intervention positively and showed statistically significant

improvement on isolated (t(9) = -5.245 p < .05) and in-sentence readings (t(9) = -2.889 p < .01).

The second paired samples t-test was implemented to compare the pre-test and post-test results of the CG. The findings are presented in Table 8:

Table 8. *Summary of the Paired Samples T-Tests for the CG*

	Group	*N*	*M*	*SD*	*df*	*t*	*P*
Isolation	Pre-Test	10	11.60	5.54	9	-1.773	.110
	Post-Test	10	14.50	4.95			
Sentence	Pre-test	10	13.50	3.92	9	-1.482	.173
	Post-Test	10	15.50	5.23			

The CG was not subjected to any intervention; therefore, their paired samples *t*-test results presented in Table 8 above show that there is no statistically significant difference between their pre-test ($\bar{x}$ = 11.60, SD = 5.44) and post-test scores ($\bar{x}$ =14.50, SD = 4.95) (*t*(9) = -1.773, p >.05) for stress placement in isolated words. Equivalently, the findings show that the participants did not make statically significant progress on their primary stress placement in words which are inserted in sentences when their pre-test ($\bar{x}$ = 13.50, SD = 3.92) and post-test scores ($\bar{x}$ = 15.50, SD = 5.23) (*t*(9) = -1.482, p >.05) were compared. Although no statistically significant difference was observed, it is clear from the means of both post-test scores of isolated ($\bar{x}$ = 14.50, SD = 4.95) and in-sentence measurements ($\bar{x}$ = 15.50, SD = 5.23) that the CG made progress to an extent which can be attributed to the effect of the pre-test applied.

Discussion and Conclusion

This study intended to investigate lexical stress placement in English pronunciation of Indo-European words loaned to Turkish by Turkish speakers of English. Furthermore, it was aimed to increase awareness on a single but important element of prosodic features, since misusage of primary stress may cause breakdowns in communication.

The first research question revealed that there was a statistically significant difference in primary stress placement of the selected loanwords between natives and Turkish speakers of English. The NG was superior to the non-native group. None of the Turkish speakers could pronounce the selected words

without negative L1 transfer or the negative effect of their previous experiences with the words. Some studies on lexical stress in general (Hişmanoğlu, 2012; Özkan, 2010; Bongaerts, Planken, and Schils, 1995; Bongaerts, van Summeren, Planken, and Schils, 1997) also pointed to the misplacement of primary stress in words. The results show concordance with Varol's (2012) study where some level of transfer was found in Turkish speakers' utterances of loanwords.

The non-native speakers were divided into two groups for the purpose of observing the effect of treatment on lexical stress patterns of English. The analyses of the second research question showed that the participants who were subjected to the treatment made significant progress. Paired samples t-test results indicated that after the treatment was provided to the TG about lexical stress placement in English, observable progress was made by the participants who attended the training. Moreover, the TG also scored a higher mean on in-sentence measurements. On the other hand, the CG did not take any training on word stress; therefore, no statistically significant difference between the pre-test and post-test was found for isolated measurements. Equivalent results were obtained for in-sentence measurements in the pre-test and post-test analyses. However, it can be noted that there was an increase in both isolated-word and in-sentence means. Although there is no statistically significant difference, the improvement of the CG can be attributed to the effect of the pre-test applied. The independent samples t-test results showed that there was a statistically significant difference between the TG and CG for post-test isolated word measurements but no significant difference was found between in-sentence post-test results of the TG and CG.

The age factor has an impact on the acquisition of stress patterns. Since all the participants are adults, it is normal for them to have foreign accents. Krashen, Long, and Scarcella (1979) stated that adults may learn phonological features more easily; however, they may struggle in native-like use of target language in the long run. In our case, it is possible to conclude that non-native participants of this study received explicit instruction on lexical stress patterns of English to increase their awareness on this critical issue, and they had significantly higher scores on implementing these rules to words in isolation. Even though there are improvements on the placement of lexical stress in words which are inserted in sentences, this progress was not significant. This result can be attributed to the age effect because while reading a sentence,

they have to use not only stress patterns but also other features of language
and they may stumble in implementing all the features at once. Although it
is obvious that they retrieved information about lexical stress and made pro-
gress in isolated word measurements, the participants also showed deficits in
using them in context. This finding is consistent with the study of Sanders,
Yamada and Neville (1999).

The Lingua Franca Core (Jenkins, 2000) is very critical for this study. Jen-
kins (2005) places word stress in non-core features by suggesting that it is
"unnecessary" to teach and "can reduce flexibility" (p. 143). Although the
main emphasis is given on intelligibility of the spoken language, findings of
our study and the studies mentioned (Hişmanoğlu, 2012; Özkan, 2010; Demi-
rezen, 2010a; 2010b; Dauer, 2005; Lord, 2005; Dickerson, 1994) showed the im-
portance of giving explicit instructions on suprasegmental features of the lan-
guage to improve learners' language proficiency and competence. It is also
possible to conclude that suprasegmental features can be taught and should
be included in ELT curricula. As a consequence of the Communicative Ap-
proach, the teaching and learning focus has moved from the segmental fea-
tures to suprasegmental features specifically on stress and intonation patterns
(Celce-Marcua, Brinton and Goodwin, 2010).

Slowiaczek (1990) conducted a study on native speakers' recognition
of word stress. A shadowing task was used with the aim of proving the effect
of word stress on native speakers' meaning processing. The results of the
study displayed that incorrect placement of lexical stress had negative effects
on native speakers' recognition of meaning. A similar study that proves the
effect of lexical stress in communication concluded that native speakers of
English focus on the stressed syllable rather than unstressed syllables
(Aitchison, 1994). Congruently, it is concluded that a native speaker probably
gives attention to mis-stressed words to decode the message, rather than lis-
tening to the segments (Benrabah, 1997). For this reason, it is important for
learners to focus on word stress instead of correctly pronouncing sounds or
segments.

The findings of the current study are consistent with the findings of
Lord (2005) where the pronunciation of adult learners of Spanish improved
dramatically after 10 weeks of explicit instruction on Spanish phonology. Ad-
ditionally, Hişmanoğlu (2012) stated that the students who attended Internet-
based video lessons outperformed those who did not in terms of maximizing

their accurate pronunciation of primary stress in English words. Özkan (2010) also concluded that instruction on word stress patterns is crucial for future teachers. The findings show strong concordance with the studies of Demirezen (2010a; 2010b), which point to the necessity of word stress patterns in English instruction.

The last question investigated the differences in utterances of the loanwords between the isolated pronunciation and in-sentence pronunciation in terms of primary stress placement of loanwords. Oller and Ziahosseiny (1970) stated that pronunciation errors probably increase due to the existence of corresponding sounds in the first language of NNSs. Consequently, it was thought that reading the isolated words that were borrowed from other languages with little or no adjustment might cause confusion since their spelling and pronunciation are similar. Accordingly, it was expected that the participants would have better scores while reading borrowed words in sentences since there are contexts leading them to use English language patterns. However, for isolated words, no context is provided which may cause confusion to divide the pronunciation patterns from Turkish to English and the researcher did not give any information or a clue about pronunciation or stress patterns of these words. The results suggested that there was no significant difference in the means of isolated word measurements and in-sentence measurements of the participants. Further analysis can be conducted to determine the factors and also to find out to what extent they place primary stress similarly.

In the light of these findings, it can be stated that Turkish speakers of English have difficulty in improving their suprasegmental pronunciation skills because they often focus on pronouncing each sound in a syllable or word correctly rather than considering prosodic features of English which is a stress-timed language. Therefore, they may face breakdowns in communication or misunderstandings. Slowiaczek (1990) and Aitchison (1994) found that word stress has a great effect on native speakers' recognition of meaning. For example, while speaking on the telephone with a bad line, it is enough for a native speaker to detect the stress in the word "photo" to guess the rest of the word which could be "photograph" /ˈfəʊ.tə.grɑːf/, "photographer" /fəˈtɑg.rə.fər/ or "photographic" /ˌfəʊ.təˈgræf.ɪk/. Therefore, instruction of lexical stress patterns is crucial for NNSs to increase their language competence.

Consequently, it can be concluded that explicit instruction on lexical stress in English helps non-native speakers to improve their language skills. The instruction can be based on Computer-Based Teaching (Demirezen, 2012; Özkan, 2010) or Communicative Approach. Even though word stress was considered as a non-core feature of language and unnecessary to teach for the sake of intelligibility (Jenkins, 2005), Field (2005) found out that both native and non-native speakers of English have serious problems with the ability to locate the words with incorrectly placed lexical stress within speech. Accordingly, if lexical stress is taught systematically and effectively along with other phonological features, it would lead to intelligible speech. Ahmad (2018) underlines the importance and effectiveness of explicit instruction to achieve success in correct application of stress and intonation. As Demirezen (2010a; 2010b; 2012a) stated, there should be an emphasis on lexical stress in teaching programs at ELT departments. Furthermore, it can be seen from the findings that it is crucial for adult learners to undergo explicit training on second language phonology/pronunciation to be able to acquire target language sounds in a successful manner. For the sake of addressing the difficulties in terms of pronunciation and creating explicit teaching materials to be used in classrooms, language teachers who teach English to Turkish learners could benefit from these results. The findings of this study can serve as a tool for language teachers to create materials to function as effective resources that eliminate these difficulties for NNSs at any level of language education.

Recommendations

In the light of the results obtained from the current study, some pedagogical and research-related recommendations can be suggested:

1. This study was limited to 10 native and 20 non-native participants and 30 loanwords. It can be applied to a broader sample with a larger number of loanwords.
2. The reasons for the differences in stress placement of loanwords can be studied for a better understanding.
3. A similar study can be conducted with native speakers of other languages.

4. This study was conducted during the period of one semester and did not aim to look into the long-term effects of training. Further longitudinal research can be conducted to observe retention of the effects of the training.
5. Curriculum and materials developers as well as language teachers can benefit from the results of this study to create more specific materials in order to render education and training in this particular field.
6. Language teachers can create explicit teaching materials for word stress patterns of English.

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Ekler

EK- 1 / Appendix I – Loanword List

Part A. Words in Isolation
1. volleyball
2. basketball
3. self-service
4. barcode
5. bulldozer
6. boomerang
7. bodyguard
8. by-pass
9. barman
10. atlas
11. anaesthetist
12. acronym
13. acrylic
14. aerobics
15. nanotechnology
16. university
17. jubilee
18. adrenaline
19. adaptation
20. hamburger
21. opera
22. broccoli
23. anti-freeze
24. banknote
25. genetic
26. diesel

27.   zeppelin
28.   formality
29.   barbecue
30.   astrology

Part B. Words in Sentences

1.   Gill took up volleyball at school and returned to the sport three years ago.
2.   They tried to play our style of basketball and it worked our guys up and brought a competitive edge out of them.
3.   Price for the main courses included vegetables or salad from a self-service salad bar.
4.   To read in such a small bar code successfully requires a very high degree of resolution.
5.   It took the 45 ton bulldozer just 8 minutes to flatten 4 homes that had stood for 52 years.
6.   A boomerang workshop promises a prize for the 'best returner'
7.   The former bodyguard to the Princess faces a second trial next month.
8.   Coventry manager and former England coach Don Howe, now 56, had a bypass operation less than four years ago.
9.   An inquest has failed to establish how a twenty six year old barman came to be found dead in his flat.
10.   I went to the library the other day and had a look in the atlas to see where Naples is.
11.   You will be seen by an anaesthetist before your operation.
12.   'That's an acronym I haven't come across.'
13.   Most of these are water-based acrylic paints, are quick drying and have a low odour.
14.   Gillian does aerobics sessions every evening.
15.   This conference organised by the National Physical Laboratory, will focus on the applications of nanotechnology in medicine and biosciences.
16.   I apply for university without any real idea of what I want to do.
17.   She celebrated her Diamond Jubilee with great pomp and ceremony.
18.   As you move slowly apart, to rest, your adrenaline levels drop quickly…

19. Then there is the need for the nature of any adaptation to learning material to be understood by the teacher and the teacher's aid.
20. I always eat hamburger and chips on Thursdays
21. I have watched her at the opera, where she glittered.
22. Cabbage, broccoli and brussels sprouts are rich in Vitamin C…
23. A glycol ether of the same chemical group from which antifreeze is derived.
24. A large denomination bank note found in the Carlisle Road area on March 13.
25. The name 'panther' comes from its genetic classification.
26. At least that was the case in Britain, where the gap between petrol and diesel fuel prices has always been small.
27. Zeppelin airships had been developed before the outbreak of war.
28. They didn't even bother with the formality of retiring to consider the case.
29. There's a delicious barbecue grill on offer in the evenings.
30. Through astrology one could be forewarned of the exact time of his coming.