Sinan Bayraktaroğlu

A Model of Classification of Phonemic and Phonetic Negative Transfer:

The case of Turkish –English Interlanguage with Pedagogical Applications

Sinan Bayraktaroğlu

sinanbayraktaroglu1@gmail.com

Abstract

This article introduces a model of classification of phonemic and phonetic negative- transfer based on an empirical study of Turkish-English Interlanguage. The model sets out a hierarchy of difficulties, starting from the most crucial phonemic features affecting "intelligibility", down to other distributional, phonetic, and allophonic features which need to be acquired if a "near-native" level of phonological competence is aimed at. Unlike previous theoretical studies of predictions of classification of phonemic and phonetic L1 interference (Moulton 1962a 1962b; Wiik 1965), this model is based on an empirical study of the recorded materials of Turkish-English IL speakers transcribed allophonically using the IPA Alphabet and diacritics. For different categories of observed systematic negative- transfer and their avoidance of getting "fossilized" in the IL process, remedial exercises are recommended for the teaching and learning BBC Pronunciation. In conclusıon, few methodological phonetic techniques, approaches, and specifications are put forward for their use in designing the curriculum and syllabus content of teaching L2 pronunciation.

Key Words: Interlanguage, Language transfer, Negative transfer, Intelligibility, Fossilızation, Allophonic transcription, Phonological competence, Common European Framework ("CEF")

Özet

Bu makale, Türkçe-İngilizce Aradili üzerine yapılan deneysel bir çalışmadaki sesbilgisel ve sesbirimsel nitelikli olumsuz dil aktarımlarının sınıflandırılmasını öneren bir modeli tanıtmaktadır. Birinci dilden kaynaklanan bu olumsuz dil aktarımları önem ve önceliklerine göre derecelendirilmektedir. Bunlar Aradili konuşmada "anlaşılabilirliği" etkileyen en önemli sesbirimsel özelliklerden başlamaktadır. Daha sonra, ikinci

dilde"anadili gibi" bir sesbilgisel yeti edinebilme amaçlandığı takdirde, kullanım dağılımlarına göre çevresel değişkenlik gösteren diğer sesbirim ve sesbirimcikler hiyerarşik olarak sıralanmaktadır. Birinci dil aktarımıyla ilgili geçmiş yıllardaki çalışmalarda kuramsal düzeyde tahmin olarak öngörülen ve bu temelde oluşturulan modeller mevcuttur (Moulton (1962a 1962b; Wiik (1965). Ancak, geliştirdiğimiz bu model deneysel nitelikli olup Türkçe-İngilizce Aradili konuşanların ses kayıtlarının ayrıntılı biçimde Uluslararası Sesbilgisi Alfabesi ve işaretlerinin sesbirimcik çevriyazı teknikleri uygulanarak ortaya çıkan bir modeldir. Ayrıca, modelin pedagojik uygulaması düşünülerek, Türkçe-İngilizce Aradili'nin seslendirilmesinde görülen, sürekli ve düzenli biçimde ortaya çıkan her olumsuz aktarımın Aradil sürecinde fosilleşmesini önlemek amacıyla BBC İngilizcesi'nin öğretim ve öğreniminde kullanılabilecek alıştırmalar önerilmektedir. Sonuç olarak, ikinci dil telaffuz eğitimi müfredatının hazırlanmasında uygulanabilecek bazı teknik sesbilgisel yöntem ve ders içerikleri önerileri yapılmaktadır.

Anahtar Kelimeler: Aradil, Dil aktarımı, Olumsuz aktarım, Anlaşılabilirlik, Fosilleşme, Sesbirimcik çevriyazı, Sesbilgisel yeti, Avrupa Yabancı Diller Ortak Çerçevesi

Introduction

One of the key features of the theory of **"Interlanguage (IL)"**[1] in second language acquisition / learning[2] is **"Language Transfer"**[3] [4], in which the speaker of a native language **("L1")** interprets and identifies the linguistic system of a foreign language **("L2")** (i.e. phonology, morphology, syntax, lexis, semantics and pragmatics) in terms of the features of L1 (i.e. **L1 interference** - **negative transfer- error**)[5] (Odlin 1989**) ,** and that *"the degree to which transfer is present in the speakers' IL will vary greatly."*[6] (Johnson & Johnson (1999 p. 355).

Of all the linguistic features in IL, "p*honological transfer is probably the most common of all in non-native speech, and the least controversial in the literature. There is no question that most IL speakers can be recognized on the basis of their 'foreign accent'* (Johnson & Johnson (1999 p.355). Likewise, Odlin (1989) confirms that *"There is little doubt that native language phonetics and phonology are powerful influences on second language pronunciation........."* (p.112)

It follows that Swan & Smith (1998), in their widely popular publication, *Learner English*, mention at the outset (*Introduction*) of their work that *"interlanguages of foreign language speakers are specific and distinct so that it makes sense to talk about Thai English, Japanese English, Greek English, and so on."*[7]

Regarding the pedagogical implications of IL Phonology and the teaching of pronunciation in a foreign language course[8], Lightbown and Spada (2008) comment as follows in a most recent publication : *"Grammar has been the focus for second language teachers and researchers for a long tıme........ vocabulary and pragmatics have also received more attention in recent years. However, we know less about pronunciation and how it is learned and taught.............It is widely believed that the degree of difference between the learner's native language and the target language can lead to greater difficulty............Research related to the teaching and learning of pronunciation is gaining more attention........"(p.104-107).*[9]

The purpose of this article is therefore threefold: Firstly, to introduce a model[10] of classifying the "negative transfer" of phonemic and phonetic features[11] of IL with any L1 and L2 combination; Secondly, to implement this model to **Turkish- English IL**[12] in classifying the findings (data) of a phonological empirical study[13] (i.e. error[14] analysis)[15] as applied to a group of adult Turkish-English IL speakers[16]. Thirdly, to suggest certain pedagogical recommendations and also few practical exercises required in the teaching of BBC English Pronunciation to speakers of Turkish-English IL.

It is hoped that the "Model" we present may be of help in developing the communicative and pragmatic competences (spoken interaction) of the learner, to those involved in pre-service and in-service teacher education,[17] and in designing ELT courses for speakers of an IL with any L1 combination; but more specifically, for those IL speakers of English with Turkish[18] as their L1.

The Model

For purposes of practical pronunciation teaching[19], this model establishes a hierarchy[20] of negative transfer (hereinafter referred to as **"NT")** for any IL speaker, ranging from the crucial factors of intelligibility, which is a minimum standard of performance required, to the least important, (i.e. *(i)* phonemic, *(ii)* phonemic-

distributional, *(iii)* phonetic, *(iv)* allophonic, and *(v)* allophonic-distributional, all with further subdivisions). Each type of NT calls for a special kind of pedagogical exercise. Accordingly, general descriptions of different phonemic and phonetic exercises are given for each category[21]. However, these exercises should be looked upon only as suggestions. They can probably be improved through a further study in methodology.

Furthermore, there are also NTs caused by differences in sound-letter representations in the orthographies of L1 and L2 which are different in nature and therefore classified separately from these hierarchy of phonological NTs.[22]

1. Phonemic NTs:

Phonemic errors occur depending on whether a sound occurs in the L1 but not in the L2, and whether the sound which occurs constitutes a full phoneme or only an allophone of a phoneme in that language. We may distinguish the following types of NTs:

1.1. Type 1(a):

L2 has a phoneme /1/ (/θ/) none of whose allophones occur in L1;   Speakers of L1 substitute for this phoneme sounds which are identified by speakers of L2 either as allophones of another L2 phoneme /2/ (/t/), or the intended phoneme. The speakers of L1 learning L2 fail to make the phonemic distinction between L2 phonemes /1/ and /2/, producing what L2 speakers variably identify either as /1/ and 2/.

This difference therefore causes both an identification and a pronunciation problem. IL speakers have to learn to identify and produce sound types that are not used in their L1. This learning process is **"interlingual transfer" i.e L1 Interference**. IL speakers have a tendency to identify the unfamiliar sounds of the L2 as phonemes of their own L1. For example, in Turkish there is no dental fricative such as the English **/θ/**, and Turkish speakers of English often produce this sound as the Turkish **/t/** and occasionally as **/s/**, i.e. **/θ ɪ n/** as **/ t ɪ n /** or **/ s ɪ n /**, and therefore are not able to differentiate between such utterances. When the distribution of the L2 phoneme is given in relation to other phonemes, this can be stated in the following way: *The L2 has phoneme sequences which involve phonemes that do not exist in L1.*

E x e r c i s e :

Exercises should consist of L2 utterance pairs containing the difficult sounds and sound contrasts, i.e. **/ θ ɪ n / - / t ɪ n / ---- / θ ɪ n / - / s ɪ n /**, for Turkish speakers.

i.   First a Turkish-English IL speaker should be able to tell whether the pairs of utterances he hears consist of repetition of an identical utterance,

i.e. **/ θn / - / θ ɪ n / ,** or a sequence of two different utterance,

i.e. **/ θ ɪ n / - / t ɪ n /.**

ii.   The second step is to be able to give a correct phonemic (or phonetic) label to the troublesome sounds occurring in the L2 utterances.

iii.   Thirdly, a learner should practice the pronunciation of the L2 minimal pairs.

1.2   Type 1 (b):

Two sounds contrast in the L2 but not in the L1. L1 has the sounds [A] and [B], but they are in non-contrastive distribution and constitute allophones of a single phoneme, whereas L2 has the sounds [A] and [B], but they are in contrastive distribution and, therefore, constitute the phonemes /A/ and /B/.

Moreover, this difference can be restated as follows: the allophonic range of one L1 phoneme covers the ranges of the two L2 phonemes which gives rise to a conflict between the two languages. For example, English makes a consistent contrast between **/ ɛ / and / æ /**, i.e. **head / h ɛ d / - had / h æ d /** . Turkish, on the other hand, has within this section of its vowel system only a single phoneme **/ɛ/** with its allophones **[æ], [ɛ],** etc.; and the conflict between Turkish and English arises from the fact that the allophonic range of the Turkish **/ɛ/** overlaps the ranges of the English **/ɛ/** and **/æ/.**

In phonemic difference **Type 1(b),** an IL speaker need not learn a new sound, but a new use of a familiar sound. He has to learn to react in a new way to familiar sounds, i.e. to identify and pronounce differences that are allophonic in his own language. This type of negative transfer is called **"intralingual transfer"** which inevitably results in identification, i.e. an IL speaker cannot hear a difference between all the contrastive utterances in the L2. This defect in hearing also causes pronunciation errors which are phonemic. A hearing and pronunciation difficulty caused this way should be eliminated as early as possible in the process of learning the L2. It is not an easy task, but is commonly assumed to cause a maximum difficulty in foreign language learning. As

Lado (1957) puts it : *"As a matter of fact, my experience on the basis of test evidence has been that the kind of problem in which part of a phoneme in the native language can pass as a separate phoneme in the foreign language, and other parts of the same native-language phoneme pass as a different phoneme in the foreign language—that kind of problem is by far the most difficult one to overcome."* (p.15)

E x e r c i s e:

i. The learner should first be made conscious of the allophonic differences in his own language. Denison (1961) points out that *"learners appear seldom spontaneously to take advantage of L1 allophonic variants to render separate, positionally less restricted L2 phonemes: Italian speakers have to be taught how to mobilise the Italian* **[ŋ]** *in __banca__ to render the English /* ŋ */ in __singing__"* (p.575).

ii. The next step is to make the language learner pronounce the difference in L2 minimal pairs, i.e. **sin / s ɪ n / - sing / s ɪ ŋ /** ; **thin / θ ɪ n /- thing / θ ɪ ŋ /**, etc.

2. Phonemic Distributional NTs:

Another type of NT which causes pronunciation difficulties concerns contrasts in the distributions of corresponding phonemes in L1 and L2. Distributional differences occur when phonetically similar sounds and similar relationships between the sounds exist in both languages, but the sounds occur in different environments in the two languages. Distributional differences can be grouped into different types according to whether they involve distributions of full phonemes or only allophones. In the case of full phonemes, a further grouping is made on the basis of whether the distribution of a L2 phoneme is wider or more restricted than that of the corresponding L1 phoneme.

The distributions of phonemes and allophones can be described mainly in two ways : a) in relation to larger phonological units, such as "word" , "syllable", etc., or b) in relation to other phonemes and allophones. We use the former description, for example, when saying that Turkish /d/ never occurs word finally, and we use the latter description when saying that Turkish /j/ never immediately follows /v/. And if, for example, we describe the distribution of Turkish /s/ by saying that it never immediately follows /t/ in word initial and word final positions, we use both the descriptions.

2.1 Type 2(a)

The distribution of an L1 phoneme is more restricted than the distribution of the corresponding L2 phoneme. This results in a learning problem as the language learner has to learn to use a familiar phoneme in unfamiliar environments. The learning process is called **"phonemic redistribution"** by Haugen (1953, p.394). When the distribution of a phoneme is given in relation to other phonemes, this can be stated in the following way: The L2 has phoneme sequences that do not exist in the L1. This can be regarded as a special case of the **Type 2(a) .**

E x e r c i s e :

This type of NT requires both identification and pronunciation practice. Exercises should contain utterances where phonemes occur in unfamiliar environments. For example, Turkish-English IL speakers should have practice in identifying and pronouncing such utterances as **sad, lead** (/d/ word finally), **review, view,** (sequence /vj/, **texts , extra** (clusters of four consonants).

2.2 Type 2(b):

The distribution of an L2 phoneme is more restricted than the distribution of the corresponding L1 phoneme. Usually no serious pronunciation difficulty is caused by this difference. Language learners occasionally use a phoneme in an environment in which the phoneme never occurs in the L2. For example, Turkish **/r/** may occur finally, i.e. **kar** 'snow' **/ k a r /**, while in BBC English, **/r/** never occurs in this environment.

E x e r c i s e :

Exercises consisting of L1 − L2 comparison pairs can be used to make the foreign language learner/speaker aware of the differences between the distribution of certain sounds in his L1 and L2, i.e. as in the case of Turkish learners/speakers of English ,

kör 'blind' **/ k œ r / - cur / k ɜ:/ ; kar** 'snow' − **car /k ɑ**:/

3. Phonetic NTs:

3.1 Type 3(a):

The phonetic range covered by the L2 phoneme **(/1/)** is articulatorily or auditorily close to the phonetic range covered by a phoneme of L1 **(/2/)**, but there is no overlap between the two phonetic areas; L2 has no further phoneme **(/3/)** sufficiently close to those phonetic ranges for substitution of the L1 phoneme **(/2/)** for the L2 phoneme **(/1/)** to

be identified by native speakers of L2 other than as an instance of **/1/**. Thus the IL speakers will nearly always be understood, but will sound foreign.

Therefore, by carrying over Turkish phonetic habits into English, the Turkish-English IL speaker consistently uses the wrong sound. For example, for the unfamiliar **alveolar [t]** of English he regularly substitutes the familiar **dental [t̪]** . In the case of phonemic errors, it is easy to show a student that faulty substitution (such as /t/ for /θ/ can produce an English word very different from the one he intended to say (such as <u>tin</u> for <u>thin</u>). In the case of phonetic errors, however, it is much less easy to convince a student that he must not carry over Turkish habits into English. If he says English **tin** [ˈtʰɪ n] with the typical **dental [t̪]** , he has not substituted one phoneme for another and therefore said a word different from the one he intended. Indeed, he can go through life pronouncing all English **alveolar [t] as dental [t̪]** and still be understood most of the time. This is not a phonemic error, which must inevitably lead to misunderstandings. It is a phonetic NT the result of which is to sound very foreign.

E x e r c i s e:

Exercises should consist of Turkish/English drill contrasting pairs of words which are phonetically similar in the two languages, so that the students can clearly hear and practise the difference. Examples:

<u>**bit**</u> 'lice' **[ˈ b̥ i t̪]** **-** **[ˈ b̥ ɪ t]** ; <u>**tip**</u> 'type' **[ˈt̪ʰ i pʰ]** **--** <u>**tip**</u> **[ˈtʰ i p]**

4. Allophonic NTs:

    4.1 Type 4(a):

    L1 shows an allophone which is not shared by the corresponding phoneme of the L2. For example, **/f/ is labio-dental** both in Turkish and English and distributed in much the same way in both languages. However, although the phonetic range of **/f/** allophones in English is not great, the Turkish **/f/** is articulated as a **voiceless bilabial fricative** with little friction, i.e. **[ɸ]** when preceded or followed by /ɔ/ or **/u/** , i.e. <u>**kof**</u> 'hollow' **[ˈ kʰ ɔ ɸ]** , <u>**ufuk**</u> 'horizon' **[u ɸ u kʰ]** . Such an allophone of the Turkish **/f/** is not shared by the corresponding **/f/** of English.

E x e r c i s e:

Exercises must start with Turkish/English contrastive listening drills. i.e. <u>**kof**</u> 'hollow' **[ˈkʰ ɔ ɸ]** **--** <u>**cough**</u> **[ˈ kʰ ɒ f]** ; <u>**lâf**</u> 'utterance' **[ˈlʲ ɑ ɸ]** **--** **laugh [ˈlʲ ɑ f].** The Turkish-English IL speaker must be made aware of the fact that he uses **[ɸ] before or after /ɔ/** or

/u/ before he can be persuaded not to use it in English. The converse of this situation is as follows:

4.2   Type 4 (b):

Here a phoneme of L2 shows an allophone which is not shared by the corresponding phoneme in L1. For example, while the Turkish /p/, whether in accented or unaccented syllables, is always aspirated, i.e. **[pʰ]**, there is marked aspiration of the English **/p/**, i.e. **[pʰ] only** before stressed vowels. In other positions, i.e. before unaccented vowels and also in final positions, such aspiration as may occur is relatively weak. The Turkish-English IL speaker, therefore, pronounces the words **upper [ˈʌ p ɘ]**, **lip [ˈlʲ ɪ p]** as [ˈʌ pʰ ɯ ɹ] and [ˈlʲ ɪ pʰ] respectively. The resulting pronunciation can be understood, but will sound foreign.

E x e r c i s e:

A Turkish-English IL speaker must be taught when to aspirate the English **/p/** and when not to, since he always aspirates it in speaking Turkish. Here two types of corrective drills would be needed:

i.   First, a Turkish/English drill contrasting the difference between **Turkish aspirated [pʰ]** and **English unaspirated [p]** , i.e. **ip** 'rope' [ˈ i pʰ] **--** **lip [ˈlʲɪ p]** ; **kapı** 'door' [ˈ kʰ ɐ pʰ ɯ] **--** **copper [ˈkʰ ɒ p ɘ] .** The Turkish speaker must be made aware of the fact that he uses

[pʰ] in medial and final positions before he can be persuaded not to use it in English.

ii. Secondly, English/English drills on the automatic alternation between the English

[p] and

[pʰ].

5. Allophonic-Distributional NTs:

5.1   Type 5 (a) :

Phonetically similar allophones of corresponding phonemes have different distributions in the L1 and the L2. For example, **Turkish / l / and English / l /** both have a clear allophone **[lʲ]** and a darker allophone **[ɫ]**. In Turkish **[lʲ]** usually occurs before and after front vowels, and **[ɫ]** before and after back vowels. In English, however, **[lʲ]** occurs before vowels and **[ɫ]** occurs after vowels or broadly speaking, finally or before consonants. Turkish-English IL speakers have difficulties in identifying the **'clear l' [lʲ]**

before English back vowels, and **'dark l' [ɫ]** after English front vowels. When they speak they are inclined, for example, to pronounce **lose** as **[ˈ ɫ u ː z̦]** instead of **[ˈ lʲ u ː z̦]** , or **hill** as **[h ɪ lʲ]** instead of **[h ɪ ɫ].**

E x e r c i s e :

L1 and L2 contrasting pairs are needed, i.e. **bil** 'know' **[ˈ b̦ i lʲ] – Bill [ˈ b̦ ɪ ɫ]** both for listening and pronunciation.

6. Orthographic NTs

6.1 Type 6 (a):

Orthographic NT is different in nature that the sources of pronunciation difficulties are mainly due to differences of one-to-one letter-sound correspondence in the orthographies of L1 and L2 rather than the differences in the sound systems. Therefore, it deserves a special category of NTs on its own right which is entirely independent from the above types of NTs. Accordingly, it brings special challenges not only in the Teaching/Learning of English Pronunciation but also the Reading and Spelling of English.

E x e r c i s e:

Phonemic/Phonetic transcription exercises **("PTE")** are indispensable as a means of separating L1 students' perceptions of L2 sounds from their orthographic representations. Roach (2005) suggests two different kinds of transcription exercise: *"in one, **transcription from dictation**, the student must listen to a person – or a tape recording – and write down what they hear; in the other, **transcription from a written text,** the student is given a passage of dialogue written in orthography and must use phonemic symbols to represent how she or he thinks it would be pronounced by a speaker of a particular accent".* (p.42) As a third kind of exercise, we should add **reading phonemic transcriptions**, as mentioned by Celce-Mucia *et al.(2005),* which *"will enable the students to comprehend the elements of pronunciation visually as well as aurally.".* (p.40)

7. Pedagogical Application of the Model to the Turkish-English IL:

The following chart is the classification of **systematic** phonemic/phonetic features of **negative transfer** of Turkish-English IL speakers which are due to Turkish (L1) **interference**[23]. They were all observed as being divergent from BBC pronunciation in the allophonic (narrow) transcriptions as had been applied to the recorded specimens of our

informants during our empirical investigation (cf. Appendix). For each type of negative transfer, specific remedial exercises are recommended (cf. Endnote 20) together with phonemic/phonetic transcription exercises ("PTE") as and when required.

Table 1. Pedagogical application of the model to the Turkish-English IL

C O N S O N A N T A L: PHONEMIC NEGATIVE TRANSFER Distinctions Between L2 Phonemes of:	CLASSIFIED TYPES OF IL NEGATIVE TRANSFER	RECOMMENDED TYPES OF EXERCISES: 1.Comparison Drills: Turkish-English ("T/E") 2.Contrastive Drills: English-English ("E/E") 3.Phonemic/Phonetic Transcription Exercises ("PTE")
/ v / - / w /	1(a) and 4(a)	**T/E: /v/;** *söv* /ˈsœv/ [ˈsœʋ] **-** *serve* /ˈsɜːv/ [ˈsɜːʋ] **E/E : /v/-/w/;** *vest* /ˈvest/ **-** *west* /ˈwest/
/ t / - / θ /	1(a), 3(a), 6(a)	**T/E: /t/;** *tip* /ˈtip/ [ˈt̥ʰ i pʰ] - *tip* /tip/[ˈtʰ ɪ p] **;** **E/E:/t/-/θ/;** *tin*/ˈtin/[ˈtɪn] – *thin*/ˈθɪn/[ˈθɪn] PTE
/ d / - / ð /	1(a), 3(a), 6(a)	**T/E: /d/;** *dek* /ˈdek/[ˈd̥ecʰ] – *deck*/ˈdek/[ˈd̥ek] **E/E: /d/-/ð/;** *doze* /dəʊz/ – *those* /ˈðəʊz/ **PTE**

/ s / - / θ /	1(a), 6(a)	**E/E : /s/ - /θ/ ;** _sick_/ˈsɪk/ – _thick_/ˈθɪk/ **PTE**
/ θ / - / ð /	1(a) , 6(a)	**E/E: /θ/ - /ð/ :** _thigh_/ˈθaɪ/- _/thy/_ˈðaɪ/ **PTE**
/ ð /- / t /	1(a), 3(a), 6(a)	**T/E : /t/;** _tip_/ˈtɪp/[ˈt̪ʰɪp] –_tip_ /ˈtɪp/[ˈtʰɪp] **E/E: /ð/ - /t/;** _then_ /ˈðen] – _ten_ [ˈtʰen] **PTE**
/ z / - / θ /	1(a), 6(a)	**E/E: /z/ - /θ/;** _zinc_/ˈzɪŋk/ – _think_ /ˈθɪŋk/ **PTE**
/ d / - / θ /	1(a) , 3(a), 6(a)	**T/E: /d/;** _dem_ [ˈd̪em] – _damn_[ˈd̪em] **E/E: /d/ - /θ/;** _din_ /ˈdɪn/– _thin_ /ˈθɪn/ **PTE**
/ n / - / ŋ /	1(b), 3 (a), 6(a)	**T/E: /n/;** _in_ [ɪn̪] – _in_ [ˈɪ n] **E/E: /n/ - /ŋ /;** _sin_ /ˈs ɪ n]– _sing_ /ˈs ɪ ŋ/ **PTE**
/-ŋ / - /-ŋk /	1(b), 6(a)	**E/E: /-ŋ / - /-ŋk/;** _sing_/ˈsɪŋ/-_sink_/ˈsɪŋk/ **PTE**
/-b/ - /p/ **(i.e [-b̥] – [- p])**	3(a), 4(b), and 2(a)	**T/E: /b/;** _kab_ /ˈkab/ - _cub_ /ˈkʌb/ **T/E:/p/([-pʰ]-[-p];** _kap_[ˈkʰapʰ] – cup[ˈkʌp] **E/E: [-b̥]-[-p];** _nib_[ˈnɪb̥]-_nip_[ˈnɪp]; _rib_-_rip_ ; _cub_-_cup_

/-g/ - /-k/ (i.e.[- g̊] – [-k])	2(a) and 4(b)	**T/E: /k/ ([-kʰ]-[-k]);** _dek_ /ˈdek/[ˈd̥ecʰ] – _deck_/ˈdek/[ˈd̥ek] **E /E: [-g̊] – [-k];** _dog_ [ˈd̥ɒg̊]- _dock_ [ˈd̥ɒk]
/-dʒ/ - /-tʃ / (i.e.[-d̥ʒ] – [-tʃ])	2(a)	**E/E: [-d̥ʒ] – [-tʃ];** _ridge_ [ˈɹɪd̥ʒ]–_rich_ [ˈɹɪtʃ]
/-v/ - /-f/ (i.e.[-v̥] – [-f])	4(a)	**T/E: /v/, /f/;** _kof_ [ˈkʰɔɸ] –_cough_ [ˈkʰɒf]; _söv_ /ˈsœv/ [ˈsœv̥] - _serve_ /ˈsɜːv/ [ˈsɜːv̥] **E/E: [-v̥] – [-f] ;** _leave_ [ˈlʲiːv̥] –_leaf_ [ˈlʲiˑf]
/b-/ - /v-/ (i.e.[b̥ -] – [v̥ -])	4(a)	**T/E : /v/;** _ver_ [ˈv̥eɹ]– _very_[ˈv̥eɹɪ] **E/E : [b̥-] – [v̥-]** _best_ [ˈb̥est]- _vest_[ˈv̥est]
PHONETIC and **ALLOPHONIC** **NEGATIVE** **TRANSFER:**		
Substitution of E alveolar **/t/ and /d/ by T dental [t̪]** **and [d̪]**	3(a)	**T/E: [t̪] / [t] ;** _bit_ [ˈb̥ɪt̪ʰ]- _bit_ [ˈb̥ɪt] **[d̪] / [d];** _dem_[ˈd̪̊em]–_damn_ [ˈd̥æm]
Substitution of E post- **alveolar [t̪] and [d̪] in [** **t̪ ɹ̥] and [d̪ ɹ̥] by T**	4(b)	**T/E alveolar (or dental) / post-** **alveolar;** _tren_ [ˈt̪ɹen]–_train_ [ˈt̪̊ɹ̥en]; _dram_-_drum_

alveolar [t] and [d]; but also by T dental [t̪] and [d̪] when a vowel is inserted		E/E alveolar and post-alveolar. *toll* [ˈtʰɒɫ] –*troll* [ˈt̺ɹɒɫ]; *died-dried*
Aspiration of T [pʰ], [tʰ],[kʰ] in all positions; only in initial stressed syllables in E.	4(b)	**T/E :** *pil* [ˈpʰilʲ] - *peel*[ˈpʰiːɫ]; *kapı*[ˈkʰɐpʰɯ] –*copper* [ˈkʰɒpə]; *top*[ˈtʰɔpʰ] - *top*[ˈtʰɒp]; *site-city*; *iki-Mickey*; *ip-lip*; *sat-set*; *şok-shock*; *kar-car*; **E/E:** *pin*[ˈpʰɪ n]-*spin*[ˈs p ɪ n] ; *tie-try*; *cock-clock*
Releasing both consonants separately in E *incomplete plosion*. Fortis plosive consonants in clusters are further released with aspiration.	4(b)	**E:** *that tent* [ˈðæt̪ˌtʰent]; *that child* [ˈðæt̪ˌˈtʃaːɪɫd̪]; *act* [ˈæk̪t]; *leagued* [ˈlʲiːg̥d]; *big pensions* [ˈb̥ɪgˌˈpʰenʃənz̥], stop clusters [stɒp ˌk̥lʲʌstəz̥], top boys [ˈtʰɒpˌˈb̥ɔːɪz̥] **PTE**
Releasing both consonants separately in E *nasal release*.	4(b)	**E:** *eaten* [ˈɪtˌn̩]; *not now* [ˈnɒtˌˈnaːʊ]; *top most* [ˈtʰɒpˌmɔˑst]; *lightning*[ˈlʲaˑɪtˌnɪŋ̩]; *cab man* [ˈkʰæbˌmən]; *goodness* [ˈg̥ʊdˌnɪs]. Syllabic nasal: *button* [ˈb̥ʌtˌn̩], *ripen* [ˈɹaɪpˌn̩] **PTE**
Releasing both	4 (b)	**E:** *bottle* [ˈb̥ɒtˌl̩]; *at last* [ət ˌˈlʲaˑst]; *needle* [ˈniːdˌɫ̩], *short legs*

consonants separately in E *lateral release*,		[ˈʃɔˑt̪ ˈlʲegz̥] **PTE**
Insertion of [ɯ] between the E plosive and syllabic nasal or lateral consonants (i.e. /ŋ/, /m/, /n/, /l/). Fortis plosives are further released with aspiration.	4(b)	**E:** Nasals (/m/, /n/, /ŋ/), /l/ and /r/ in some cases. i.e. *cotton* [ˈkʰɒtn̩], *bottle* [ˈbɒtl̩] **PTE**
Substitution of E /f/ by T [f], [fʲ], [ɸ], and [ɸʲ] interchangeably.	4(a)	**T/E:** *kof* [ˈkʰɔɸ] –*cough* [ˈkʰɒf]*;* lif[ˈlʲiɸʲ] –*leaf* [ˈlʲiˑf]; *fors* - *force* **PTE**
Substitution of E /v/ by T [ʋ], [ʋʲ],[β], and [βʲ] interchangeably.	4(a)	**T/E:** *söv* /ˈsœv/ [ˈsœɣ̊] - *serve* /ˈsɜːv/ [ˈsɜːɣ̊]; *ov* [ˈɔβ̥],[ˈɔɣ̊] –*of* [ˈɒɣ̊],[ˈəɣ̊]*;* *eve-ever; av-love* **PTE**
Substitution of E /r/ (voiced post-alveolar frictionless continuant by T post-alveolar fricative [ɹ̝] initially; by T alveolar tap [ɾ] medially; silent E /r/ in final positions by T [ɹ̝] or [ɾ] .	4(a) and 4(b); 2(b) and 6(a)	**T/E:** *renk* [ˈɹʲeŋcʰ] – *rank* [ˈɹæŋk] *;* *seri* [ˈsʲerʲi̥] –*ferry;*[ˈfeɹɪ]; *kar*[ˈkʰɑɹ]– *car*[ˈkʰɑː]*;* and English post-vocalic /r/: *card* [ˈkʰɑːd̥], *barn,* *fear* **PTE**
Substitution of E voiceless glottal fricative /h/ by T	4(a)	**T/E:** *his* [ˈçi̥s] –*his* [hɪz̥]

[ç] and [x] in initial positions.		*hop* [ˈxɔpʰ] – *hop* [ˈhɒp]
Substitution of E alveolar /n/ by T dental [n̪] .	3(a)	**T/E [n̪] / [n] ;** *not* [ˈn̪ɔtʰ] – *not* [ˈnɒt]
Substitution of E dental [n̪] and post-alveolar [n] by T alveolar and dental [n̪] variably.	4(b)	**E/E dental [n̪] / post-alveolar [n];** *tenth* [ˈtʰen̪θ], *southern* [ˈsʌðn̪] *lunch* [ˈlʲʌn̪tʃ], *ocean* [ˈəˑʊʃn̪]
Substitution of E alveolar / l / by T dental [ḻ]	3(a)	**T/E:** *lif* [ˈḻʲiɸ] –*lip* [ˈlʲip];
Substitution of E [lʲ] by T [ɫ] before back vowels in initial and final word positions; E [ɫ] by T [lʲ] after front vowels in final word positions; but usually T [lʲ] and [ɫ] interchangeably in many contexts.	5(a)	**T/E:** *loŝ* [ˈɫɔʃ] – *long*[ˈlʲɒŋ]; *fil* [ˈfilʲ] –*fill* [ˈfɪɫ] ; *tel-tell* **PTE**
***Palatalizatio*n of E consonants before and/or after front vowels. In E however there is forward articulation [ḵ , g̱] of only before /iː/,/ɪ/, /eɪ/, /j/, /ɪə/.**	4(a)	**T/E:** *tip* [ˈtʰʲi pʰʲ] – *tip* [ˈtʰ i p]; *dem* [ˈd̠ʲe m]- *damn* [ˈd̠ æ m]; *kek* [ˈcʰe cʰ] – *cake* [ˈḵʰeˑɪ k] **PTE**

Close *lip rounding* **of E consonants throughout the articulation of the whole syllable containing any of the E rounded vowels. In E however single consonant or consonant clusters only before /ʊ/,/uː/,/ʊə/, /aʊ/, /ɔʊ/ and /w/.**	4(a)	T/E: pul [ˈpʰʷuɫʷ] – *pull* [ˈpʰʷuɫ] ; *çok* [ˈtʃʷɔkʰʷ]-*chalk* [ˈtʃɔ·k]; *kul* [ˈkʰʷuɫʷ] – *cool* [ˈkʰʷuːɫ]; *kol-call*; *tok-talk*; *kof-cough*;*kör-cur* PTE
NEGATIVE TRANSFER INVOLVING **L2 FINAL DOUBLE CONSONANT CLUSTERS** **("-CC ")**		
English Double Consonant Clusters Involving Phonemes Which Do Not Occur in Turkish:		
/- θ s /	1(a); 6(a)	**E/E: /-t s/ - /- θ s /;** *debts* /ˈdets/ - *deaths* /ˈdeθs/; *mats-maths; miss-myths*; **PTE**
/ - θ t /	1(a) ; 6(a)	**E /E: /-θ t / - / -s t/ and /-t/;** *berthed* /ˈbɜːθt/- *burst* /ˈbɜːst/,*Bert* /ˈbɜːt/

		PTE
/- ð z /	1(a); 6(a)	**E/E: /-d z/ - /-ð z /;** loads /ˈləʊdz/- _loathes_ /ˈləʊðz/; **PTE**
/- ð d /	1(a); 6(a)	**E/E : /-d/ - /ð d/;** _sued_/ˈsuːd/,/sjuːd/-_soothed_ /ˈsuːðd/; _load_-_loathed; sized_-_scythed_ **PTE**
/ - f θ /	1(a) ; 6(a)	**E/E : /-f t/ - /f θ/;** _fifth_ /ˈfifθ/ **PTE**
/ - p θ /	1(a) ; 6(a)	**E/E : / -p t/ - /p θ/;** _depth_ /ˈdepθ/ **PTE**
/ - t θ /	1(a); 6(a)	**E/E : /-t θ/ - / - t s/ and /-t/:** _eighth_/eitθ/-_eights_ /ˈeits/, _eight_/ˈeit/ **PTE**
/ - d θ /	1(a); 6(a)	**E/E : /-d θ/ - /-t/, /-t s/ and /-d/** _width_/ˈwɪdθ/–_wit_/ˈwɪt/,_wits_/ˈwɪts/; _breadth_ /ˈbɹedθ/- _bread_/ˈbɹed/; _hundredth_-_hundred_ **PTE**
/ - m θ /	1(a); 6(a)	**E/E:/-m/-/mθ** /_warm_/ˈwɔːm/-_warmth_ /ˈwɔːmθ/ **PTE**
/ - n θ /	1(a) ; 6(a)	**E/E: /-nθ/ - /-ns/, /-nt/;** _tenth_/ˈtenθ/- _tense_ /ˈtens/,_ten_/ˈten/ **PTE**
/ - l θ /	1(a); 6(a)	**E/E: /-lt/ -/-lθ/;** _Welt_ /ˈwelt/ –_wealth_ /welθ/

		PTE
/ - ŋ θ /	1(a); 6(a)	**E/E: /-ŋθ/;** _length_ /ˈleŋθ/, _strength_ /ˈstɹeŋθ/ **PTE**
/ - ŋ z /	1(b); 6(a)	**E/E: /-ŋks/ -/-ŋz/;** _rinks_ /ˈɹɪŋks/ – _rings_ /ˈɹɪŋz/; sinks- sings **PTE**
/ - ŋ d /	1(b); 6(a)	**E/E: /-ŋt/ - /-ŋd/;** _clanked_ /ˈklæŋt/ – _clanged_ /ˈklæŋd/ **PTE**
NEGATIVE TRANSFER INVOLVING L2 FINAL DOUBLE CONSONANT CLUSTERS WITH VOICED PLOSIVES OR AFFRICATIVES:		
/ - n d /	2(a); 6(a)	**E/E: /-nt/ - /-nd/** _sent_ /ˈsent/– _send_ /ˈsend/ **PTE**
/ - l d /	2(a); 6(a)	**E/E: /-lt/ - /-ld/** _built_ /ˈbɪlt/- _build_ /ˈbɪld/ **PTE**
/ - n dʒ /	2(a); 6(a)	**E/E: /-ntʃ / - /-ndʒ /** _lunch_ /ˈlʌtʃ/ – _lunge_ /ˈlʌndʒ/ **PTE**
/ - g z /	2(a) ; 6(a)	**E/E: /-gz/ - /-ks/** _begs_ /ˈbeɡz/- _backs_ /ˈbeks/ **PTE**
		E/E: /-dz/ - /-ts/

/ - d z /	2(a) ; 6(a)	*Seeds* /ˈsiːdz/ – *seats*/ˈsiːts/ **PTE**
/ - b z /	2(a) ; 6(a)	E/E: /- bz/ - /-ps/ *cabs* /ˈkæbz/ – *caps* /ˈkæps/ **PTE**
/ - g d /	2(a); 6(a)	E/E: / -gd/ - /-kt/ *begged* /ˈbegd/– *backed* /ˈbekt/ **PTE**
/ - b d /	2(a) ; 6(a)	E: / -bd/ - /-pt/ *mobbed* /ˈmɒbd/– *mopped* /ˈmɒpt/ **PTE**
/- dʒ d /	2(a); 6(a)	E/E: /-dʒd/ - /-tʃt/ *edged* /ˈedʒd/ – *etched* /ˈetʃt/ **PTE**
/ - z d /	2(a); 6(a)	E/E: /-zd/ - /-st/ *raised* /ˈɹeɪzd/ – *raced* /ˈɹeɪst/ **PTE**
/- v d /	2(a); 6(a)	E/E: /-vd/ - /-ft/ *served* /ˈsɜːvd/ - *surfed* /ˈsɜːft/ **PTE**
Negative Transfer involving English final double consonant clusters which do not occur in Turkish:[24]		
/ - m z /	2(a);6(a)	**PTE**

/- n z /	2(a);6(a)	**PTE**
/ - l z /	2(a);6(a)	**PTE**
/ - v z /	2(a);6(a)	**PTE**
NEGATIVE TRANSFER INVOLVING LONGER L2 CLUSTERS (- CCC and - CCCC)		
/ - m p s /	2(a); 6(a)	**E/E:** _camps_/ˈkæmps/–_campus_ /ˈkæmpəs/ **PTE**
/ - ŋ k s /	1 (b); 6(a)	**E/E:** _thanks_ /ˈθæŋks/–_thank us_/ˈθæŋk əs/ **PTE**
/ - s k t /	2(a); 6(a)	**E/E:** _basked_ /ˈbɑskˏt/ _– basket_ /ˈbɑskət/ **PTE**
/ - n s t /	2(a); 6(a)	**E/E:** _I rinsed_ /aɪ ˈɹɪnst/ – _I rinse it_ /aɪ ˈɹɪns ɪt/ **PTE**
/ - k s t /	2(a);6(a)	**E/E:** _I mixed_ /aɪ ˈmɪkst/– _I mix it_ /aɪ ˈmɪks ɪt/ **PTE**
/ - n dʒ d /	2(a); 6(a)	**E/E:** _changed it_ /ˈtʃeɪndʒd ɪt/ – _change it_ /ˈtʃeɪndʒ ɪt/ **PTE**

/ - l p t /	2(a); 6(a)	**E/E:** *helped ıt-* /ˈhelpt ıt/ *help it* /ˈhelp ıt/ **PTE**
/ - ŋ θ n d /	1(a) (b); 6(a)	**E/E:** *lengthened it*– /ˈleŋθnd ıt/ *lengthen it* /ˈleŋθn ıt/ **PTE**
/ - l d z /	2(a); 6(a)	**E/E:** *folds*/ˈfəʊɫdz/– *folders*/ˈfəʊɫdəz/ **PTE**
/ - n d z /	2(a);6(a)	**E/E:** *tends*/ˈtendz/ – *tenders*/ˈtendəz/ **PTE**
/ - ŋ k θ s /	1(a)(b); 6(a)	**E/E:** *strengths* /ˈstɹeŋkθs/ – *strength* /ˈstɹeŋkθ/ **PTE**
/ - z n t θ /	1(a)(b); 6(a)	**E/E:** *Thousandths* /ˈθaʊzntθs/ – *Thousandth* /ˈθaʊzntθ **PTE**
NEGATIVE TRANSFER INVOLVING INITIAL L2 CLUSTERS (CC- , CCC-)		
Negative Transfer		

involving initial clusters which occur in English but not in Turkish:		
/ t w - /	1(a); 4(a)	**E/E:** *twin*/ˈtwɪn/– *tin* /ˈtɪn/, *win*/ˈwɪn/
/ k w - /	1(a); 4(a)	**E/E:** *quick*/ˈkwɪk/–*kick*/ˈkɪk/, *wick*/ˈwɪk/
/ d w - /	1(a); 4(a)	**E/E:** *dwell*/ˈdwel/– *dell* /ˈdel/, *well*/ˈwel/
/ g w - /	1(a); 4(a)	**E/E:** *Gwen* /ˈgwen/ *-when*/ˈwen/
/ s w - /	1(a); 4(a)	**E/E:** *sway* /ˈsweɪ/ – *say*/ˈseɪ/, *way*/ˈweɪ/
/ θ r - /	1(a) ; 6(a)	**E/E:** *three* /ˈθɹiː/- *tree* /ˈtɹiː/ **PTE**
/ θ w - /	1(a) ; 6(a)	**E/E:** *thwart* /ˈθwɔːt/ – *thought* /ˈθɔːt/, *wart* /ˈwɔːt/ **PTE**
NEGATIVE TRANSFER INVOLVING INITIAL CLUSTERS WITH FAMILIAR SOUNDS BOTH IN L1 AND L2 BUT UNFAMILIAR COMBINATIONS IN L1 :		**PTE FOR THE AVOIDANCE OF INSERTION OF A VOWEL OR OMITTING /j/ BETWEEN THE INITIAL CLUSTERS**
/ p j - /	2(a); 6(a)	**E/E:** *pew* [ˈpʷj̊ʷüː]- *you* [ˈjʷüwː]**PTE**
/ t j - /	2(a); 6(a)	**E:** *tune* [ˈtʷj̊ʷüːn]**PTE**
/ k j - /	2(a); 6(a)	**E/E:** *queue* [ˈkʷj̊ʷüː] –coo [ˈkʰʷuː]**PTE**

/ b j - /	2(a) ; 6(a)	**E:** _beauty_ [ˈb̥ʷjʷüˑtɪ]**PTE**
/ d j - /	2(a); 6(a)	**E:**_during_ [ˈd̥ʷjʷʊˑəɹɪŋ]**PTE**
/g j - /	2(a); 6(a)	**E:**_gewgaw_ [ˈg̥ʷjʷüːgʷɔː]**PTE**
/m j- /	2(a); 6(a)	**E:**_music_ [ˈmʷjʷüˑzɪk]**PTE**
/ n j -/	2(a); 6(a)	**E/E:**_new_ [ˈnʷjʷüː]- _you_ [ˈjʷuː]**PTE**
/ l j-/	2(a); 6(a)	**E:**_lure_ **[ˈlʲʷjʷʊːə] PTE**
/ f j-/	2(a); 6(a)	**E/E:**_few_ [ˈfʷjʷüː] - you [ˈjʷüː] **PTE**
/ v j -/	2(a); 6(a)	**E/E:**_view_[ˈɣʷjʷüː], _you_ [ˈjʷüː] **PTE**
/ s j - /	2(a); 6(a)	**E/E:**_suit_ [ˈsʷjʷüːt], _sue_ [ˈsʷjʷüː], _assume_[əˈsʷjʷüm],_pursue_[pəˈsʷjʷüː] **PTE**
/ h j- /	2(a); 6(a)	**E:**_huge_ [ˈhʷjʷüːd̥ʒ̊] **PTE**
/ g l- /	2(a); 6(a)	**E/E:**_glad_[ˈg̥ʷlʷʲæd̥] - _gad_[ˈg̥æd̥], _lad_ [ˈlʲæd̥] **PTE**
/ s l - /	2(a); 6(a)	**E/E**:_sleep_[ˈslʲiːp]-_seep_[ˈsiːp], _leap_[ˈlʲiːp] **PTE**
/ ʃ r - /	2(a); 6(a)	**E/E:**_shred_ [ˈʃɹed̥]-_shed_ [ˈʃhed̥],_red_ [ˈɹed̥] **PTE**
Initial clusters which occur both in Turkish and English :		**PTE for the avoidance of insertion of / ə/, /i /, and / ɪ / between the following intial clusters;** **E utterances of phonetically similar words with and without the insertion of /ə/, /i /, and /ɪ/ ;**
/pl-/	6(a)	**E/E:** _plight_ [ˈpl̥ʲaˑɪt] – _polite_ [pəˈlʲaˑɪt]**PTE**

/pr-/	6(a)	**E/E:** _prayed_ [ˈpɹeːɪḍ] – _parade_ [pəˈɹeːɪḍ]; _prayed_ [ˈpɹeːɪḍ] – _paid_ [ˈpeːɪḍ], _raid_ [ˈɹeːɪḍ]**PTE**
/tr-/	6(a)	**E/E:** _treat_ [ˈt̺ɹiˑt]- _teat_ [ˈtʰiˑt], _reed_ [ˈɹ iːḍ] **PTE**
/kl-/	6(a)	**E/E:** _claps_ [ˈkl̥ʲæps]– _collapse_ [kəˈlʲæps] **PTE**
/kr-/	6(a)	**E/E:** _cress_ [ˈkɹes]- _caress_ [kəˈɹes]
/bl-/	6(a)	**E/E:** _blow_ [ˈb̥lʲəːʊ]– _below_ [b̥ɪˈlʲəːʊ]
/br-/	6(a)	**E/E:** _bright_ [ˈb̥ɹaˑɪt]– _bite_ [ˈb̥aˑɪt], _right_ [ˈɹaˑɪt]
/dr-/	6(a)	**E/E:** _drive_ [ˈd̥ɹaːɪɣ̊] – _derive_ [dɪˈɹaːɪɣ̊]
/gr-/	6(a)	**E/E:** _griller_ [ˈg̊ɹɪlʲə]– _gorilla_ [gəˈɹɪlʲə]
/fr-/	6(a)	**E/E:** _fright_ [ˈfɹ̥aˑɪt]– _fight_ [ˈfaˑɪt], _right_ [ˈɹaˑɪt]
/fl-/	6(a)	**E/E:** _fled_ [ˈfl̥ʲeḍ]- _fed_ [ˈfeḍ], _led_ [ˈlʲeḍ]
/sp-/	6(a)	**E/E:** _sport_ [ˈspɔˑt] – _support_ [səˈpɔˑt]
/st-/	6(a)	**E/E:** _steam_ [ˈstiːm] – _seam_ [ˈsiːm], _team_ [ˈtʰiːm]
/sk-/	6(a)	**E/E:** _scum_ [ˈskʌm]– _succumb_ [səˈkʌm]; **E/E:** _scow_ [ˈskaːʊ] – _sea-cow_ [ˈsiˑ ˈkʰaːʊ]
		E/E: _smock_ [ˈsmɒk]- _sock_ [ˈsɒk],

/sm-/	6(a)	*mock* [ˈmɒk]
/sn-/	6(a)	**E/E:** *snow* [ˈsnə:ʊ] – *so* [ˈsə:ʊ], *no*[ˈnə:ʊ]
V O C A L I C: **PHONEMIC NEGATIVE TRANSFER:** **Phonemic Distinctions Between:**		
/ i: / - / ɪ /	1(b)	**E/E**: *sit* /ˈsɪt/ – *seed* /ˈsi:d/; *live* /ˈlɪv/ –*leave* /ˈli:v/; *bit* /bɪt/- *beed*/ˈbi:d/
/ æ / - / e /	1(b)	**E/E:** *set* /ˈset/ – *sat* /sæt/; *bed* /ˈbed/– *bad* /ˈbæd/
/ ʌ / - / ɑ: /	1(b)	**E/E** : *cut* /ˈkʌt/– *card* /ˈkɑ:d/;
/ ɒ / - / ɔ: /	1(b)	**E/E:** *don* /ˈdɒn/– *dawn* /ˈdɔ:n/; *cod* /ˈkɒd/- *cord* /ˈkɔ:d/
/ ʊ / - / u : /	1(b)	**E/E**: *full* /ˈfʊl/ –*fool* /ˈfu:l/; *pull* /ˈpʊl/ –*pool* /ˈpu:l/
/ e / - / e ɪ /	1(a) and 3(a)	**T/E**: *kek* /ˈkek/–*cake* /ˈkeɪk/; *tek* /ˈtek/–*take* /ˈteɪk/; *tel* /ˈtel/– *tale* /ˈteɪl/; **E/E** : *bet*/bet/- *bate*/ˈbeit/; *fell/ˈfel/ -fail*/ˈfeɪl/; *west/ˈwest/- waist*/ˈweɪst/
/ ɔ : / - / ə ʊ /	1(a) and 3(a)	**E/E:** *called* /ˈkɔ:ld/– *cold* /ˈkəʊld/; *bought* /ˈbɔ:t/– *boat* /ˈbəʊt/
/ ɒ/ - / ə ʊ /	1(a) and 3(a)	**E/E:** *cost* /ˈkɒst/ – *coast* /ˈkəʊst/;

		knot /ˈnɒt/-*note* /ˈnəʊt/
/ ɑː / - / a ʊ /	1(a) and 3(a)	**E/E**: *darn* /ˈdɑːn/ – *down* /ˈdaʊn/
/ iː / - / ɪ ɘ /	1(a) and 3(a)	**E/E**: *bee* /ˈbiː/– *beer* /ˈbɪə/; *tea* /ˈtiː/ – *tear* /ˈtɪə/
/ e / - / e ɘ /	1(a) and 3(a)	**E/E**: *very* /ˈveɹɪ/ – *vary* /ˈveəɹɪ/; *merry* /ˈmeɹɪ/-*Mary* /ˈmeəɹɪ/
/ æ / - / e ɘ /	1(a) and 3(a)	**E/E**: *marry* /ˈmæɹɪ/– *Mary* /ˈmeəɹɪ/
/ uː / - / ʊ ɘ /	1(a) and 3(a)	**E/E**: *too* /ˈtuː/– *tour* /ˈtʊə/
PHONETIC NEGATIVE TRANSFER:		
Substitution of variable E vowel lengths of (i.e. /iː/, /ɔː/, /uː/, /ɜː/, /ɑː/) in different appropriate phonetic contexts by T short vowels.	3(a), 6(a)	**E/E**: *see* [ˈsiː], *seed* [ˈsiːd], *feeding* [ˈfiˑdɪŋ̩], *seat* [ˈsiˑt], *seating* [ˈsitɪŋ̩], *haunt* [ˈhɔˑnt]; *sit* [ˈsɪt]-*seat* [ˈsiˑt]-*seed* [ˈsiːd̩]; *cod* [ˈkʰɒd̩]- *cart* [ˈkʰɑˑt]-*card*[ˈkʰɑːd̩]; *cot* [ˈkʰɒt]- *court* [ˈkʰɔˑt]- *cord* [ˈkɔːd̩] *loose* [ˈlʲuˑs] – *lose* [ˈlʲuːz̩] *bud-bard; Luke-look; read-rid; bird-bad; bat-but; heard-hurt; bad-bat; halve-half;read-rid;* **PTE**
Avoidance of variable E vowel lengths of diphthongs in different appropriate phonetic contexts.	3(a), 6(a)	E/E: *go* [ˈɡəˑʊ], *played* [ˈp̥ʲeˑɹd̩], *climbing*[ˈkl̥ʲaˑɪmɪŋ̩], *plate* [ˈp̥ʲeˑɪt], *potato* [ˈpəˈtʰeɪtəˑʊ]
Substitution of E /ɜː/ with neutrally spread lips by lip rounding of T [œ]	3(a), 6(a)	**T/E :** *göl* [ˈɡʷœlʷʲ] – *girl* [ˈɡɜːlʲ] **PTE**

type sounds.		
Substitution of E /eɪ / by the T [ej]	3(a) 6(a)	**T/E :** _bey_ /ˈbej/-_bay_ /ˈbeɪ/ **PTE**
Substitution of E /aɪ / by the T [aj]	3(a),6(a)	**T/E** :_bay_ /baj/ - _buy_ /baɪ/;_tay_ /taj/ - _tie_ /taɪ/ **PTE**
Substitution of E /ɔɪ/ by the T [ɔj]	3(a), 6(a)	**T/E :** _toy_ /tɔj/ - _toy_ /tɔɪ/ _boy_ /bɔj/ - _boy_ /bɔɪ/ **PTE**
Substitution of E /əʊ/ by T short /ɔ/	1(a) and 3(a), 6(a)	**T/E:** _bot_ [ˈb̥ɔt̪ʰ]- _boat_ [ˈb̥əˑʊt]; _tost_ [ˈt̪ʰɔst̪ʰ] – _toast_ [ˈtʰəˑʊst] **E/E:** _bought_ [ˈb̥ɔˑt]- _boat_ [ˈb̥əˑʊt]; _called_ [ˈkʰɔːɫd̥] – _cold_ [ˈkʰəˑʊɫd̥]; _cost_ [ˈkʰɒst] – _coast_ [ˈkʰəˑʊst]; _knot_ [ˈnɒt]- _note_ [ˈnəˑʊt]; _spot_ [ˈspɒt] – _sport_ [ˈspɔˑt] **PTE**
Substitution of E /aʊ/ by T short [ɑ]	1(a) , 3(a),6(a)	**T/E:** _tan_ [ˈt̪ʰɑn̪]- _town_ [ˈtʰaːʊn] **E/E:** _darn_ [ˈd̥ɑːn] – _down_ [ˈd̥aːʊn]**PTE**
Substitution of E / ɪ ə / by T /j/ + [ɯ] type vowel for the second element in	1(a), 1(b), 3(a), (6a)	**E/E:** _bead_ [ˈb̥iːd̥] – _beard_ [ˈb̥ɪːəd̥]; _cheese_ [ˈtʃiːz̥]-_cheers_ [ˈtʃiːəz̥]; _he_ (strong form) [ˈhiː] – _here_ [ˈhiːə];

word final positions; In medial positions, substitution of T [ɯ] or [ɨ] vowels for E /ə/, or repetition the first element /ɪ/; Pronunciation of /r/ before a consonant or finally as in the E orthographic representation of /ɪə/.		_fee_ [ˈfiː]- _fear_ [ˈfiːə] _bee_ [ˈb̥iː] – _beer_ [ˈb̥iːə] _tea_ [ˈtʰiː] – _tear_ [ˈtʰiːə **PTE]**
Substitution of E /eə/ by the allophones of T /ɛ/, i.e. [æ], [e], [ɛ̧], [æ̧], [ȩ];	1(a), 3(a), 6(a)	**T/E:** _veri_ [ˈʋeɹi]- _vary_ [ˈɣeˑəɹɪ]; **E/E:** _very_ [ˈveɹɪ] – _vary_ [ˈɣeˑəɹɪ]; _marry_ [ˈmæɹɪ] – _Marry_ [ˈmeˑəɹɪ] _merry_ [ˈmeɹɪ] - _marry_ [ˈmæɹɪ] – _Marry_ [ˈmeˑəɹɪ] **PTE**
Substitution of E /ʊə/ by the allophones of T /u/, i.e. [u̧], [u̧], [u], [uː]; Lip rounding throught the syllable affecting the other consonants; Pronunciation of /r/ as in the E orthographic representation of /ʊə/.	1(a), 3(a), 6(a)	**T/E:** _tur_ [ˈtʰʷuʷɹ̧ʷ] - _tour_ [ˈtʰʊːə]; _şu_ [ˈʃʷu] - _sure_ [ˈʃʊːə]; _bu_ [ˈb̥ʷu] – _boor_ [ˈb̥ʊːə] **E/E:** _too_ [ˈtʰuː] – _tour_ [ˈtʊːə]; _shoe_ [ˈʃuː] – _sure_ [ˈʃʊːə]; _do_ [ˈd̥uː] – _dour_ [ˈd̥ʊːə] **PTE**
Pronunciation of E triphthongs (i.e. /eɪə/, /aɪə/, /ɔɪə/, /əʊə/, /aʊə/ in disyllabic form with the same type of substitutions	1(a), 3(a), 6(a)	**E/E:** _play_ [ˈpl̥eːɪ]- _player_ [ˈpl̥eːɪə]; _buy_ [ˈb̥aːɪ] – _buyer_ [ˈb̥aːɪə]; _blow_ [ˈbl̥ɔːʊ] – _blower_ [ˈbl̥ɔːʊə]; _employ_ [emˈpl̥ɔːɪ] – _employer_[emˈpl̥ɔːɪə];

141

for the diphthongs as above; insertion of T /j/ after the first vowel; Pronunciation of /r/ in final positions or before a consonant as in the representation of E orthography.		_hour_ [ˈaːʊə], _power_ [ˈpaːʊə], _shower_ [ˈʃaːʊə], _tower_ [ˈtʰaːʊə], _scour_ [ˈskaəʊə], _devour_ [dɪˈɣaːʊə] **PTE**
Substitution of E / ə / by the T [ɯ], [m̩], [ɤ], and occasionally by [ɨ] and some other vowels as E orthography represents.	3(a), 6(a)	**Extensive PTE**

8. Conclusion

Our phonetic analysis of Turkish-English IL speakers provided us with the information concerning the nature and sources of phonemic and phonetic negative transfer which lead us to design a model of their classification for pedagogical purposes.

On the theoretical level, we can argue that the phonological performance of our informants has reached a plateau where features of **fossilized**[25] (Selinker 1972) negative transfer play a dominant role in their performance of L2 (English) pronunciation,[26] being all divergent from BBC pronunciation.

However, as Corder (1974) puts forward, IL is a dynamic continuum along which Turkish-English IL informants can move toward an increasingly effective L2 pronunciation provided that further learning/teaching input is available to develop the informants' already achieved performance.

It is therefore possible for the informants to go beyond this plateau with (i) exceptional effort or motivation to improve their English pronunciation and (ii) further

training by a teacher who is well equipped both with the knowledge of phonetics and also the methodological techniques required for effective pronunciation teaching.[27]

On the methodological level, from what we have already seen of the nature of phonemic contrasts and allophonic variations in this investigation, it needs to be emphasized that the practice of sounds in isolation is of limited value. Learning a pronunciation system is learning to operate a set of contrasts, and this can only be done if the practice itself gives the learner the opportunity to relate phonemes to one another. As an isolated unit a phoneme has no phonetic form. We can only know how it is related phonetically when we know its position and phonetic environment. As seen in our empirical data, divergences from BBC pronunciation may also stem not from the phonetics of the sound itself but from the need to produce it in an unaccustomed position in the syllable or the word (cf. phonemic-distributional difficulties, types 2(a) and 2(b)). We would not deny that a completely new sound might be isolated to begin with, while muscles brought into play together for the first time, but everything argues that practice must be, above all, of sounds integrated into syllables, words, and sentences.

Therefore, we take the following pedagogical propositions as useful guidelines in teaching pronunciation:

a) that skill in pronunciation consists of a set of automatic habits involving the hearing organs and the speech organs, plus the ability not only to identify significant sounds in a stream of speech but also to react to them in an acceptable manner;

b) that a perquisite to developing the ability to produce significant sounds is development of the ability to identify the significant sounds;

c) that spoken language habits can be most effectively developed by drilling;

d) that learning the essential points of the foreign sound system and developing the necessary automatic habits can best take place with a restricted number of vocabulary items; and

e) that, to be effective, learning must take place with regard for meaning in a contextual setting, not in isolation.

Furthermore, it needs to be emphasized that the teaching of segmental phonemes alone, as outlined in this paper, cannot lead to an overall effective communication in L2 unless stress, rhythm and intonation

(i.e. suprasegmentals) are also given due attention in teaching pronunciation. This is an area which requires further research in the phonology of Turkish-English IL.

Finally, **Common European Framework (CEF)**, as an internationally acknowledged and widely adopted model of excellence for communicative language learning, teaching and assessment, sets out the following specifications for *phonological competence* which[28] "*involves a knowledge of, and skill in the perception and production of:*

- *the sound-units (**phonemes**) of the language and their realisation in particular contexts (**allophones**);*
- *the phonetic features which distinguish phonemes (**distinctive features,** e.g. voicing, rounding, nasality, plosion);*
- *the phonetic composition of words (**syllable structure,** the sequence of phonemes, word stress, word tones);*
- *sentence phonetics (**prosody**)*
    - *sentence stress and rhythm*
    - *intonation*
- *phonetic reduction*
    - *vowel reduction*
    - *strong and weak forms*
    - *assimilation*
    - *elision"* (Council of Europe (2001), p. 116-117)

Endnotes:

[1] "*An* **interlanguage** *or, more explicitly,* **interim language** *is an emerging* **linguistic** *system that has been developed by a learner of a* **second language** *(or L2) who has not become fully proficient yet but is only* **approximating** *the* **target language***: preserving some features of their* **first language** *(or L1) in speaking or writing the target language and creating innovations. An interlanguage is* **idiosyncratically** *based on the learners' experiences with the L2. It can* **fossilize** *in any of its developmental stages.*" (Richards (1974, pp.34-36 and Chambers (1995, pp.249-251) as cited in http://en.wikipedia.org/wiki/interlanguage.

For a brief discussion of the concept of IL see Johnson & Johnson (1999, p.174-6). As mentioned in this entry, Selinker (1972)(1992) postulates "*five central processes of interlanguage:*

- **language transfer,** *in which the features of the L1 are projected onto the L2…;*
- **over-generalization of L2 rules,** *in which L2 rules are applied too widely;*
- **transfer of training,** *in which language teaching itself creates language rules that are not part of L2;*
- **strategies of L2 learning,** *the means through which the learner builds up the L2, such as repetition.....;*
- **communication strategies,** *the ways in which the learner tries to communicate in the L2.*" (p.175)

[2] This study focuses on **"language learning"** rather than **"language acquisition"**, since the phonemic and phonetic description of Turkish-English IL as given in the Appendix is the result of Turkish adults who have learned English as a foreign language and not acquired it in a bilingual context or from the very moment of their birth. Therefore, Krashen's (1985) distinction between the two processes of "language acquisition" and "language learning" should be borne in mind.. Acquisition is the "*subconscious process identical in all important ways to the process children utilize in acquiring their first language*" (Krashen, 1985, p.1) and learning refers to the "*conscious process*" that results in '*knowing about language*` (Krashen, 1985,p.1) in "*classroom experience, in*

which the learner is made to focus on form and to learn about the linguistic rules of the target language" (Mitchell & Myles ,2004.p.45).

However, it needs to be clarified for pedagogical purposes that the learning process of L2 pronunciation involves both learning and acquiring **phonological competence** (i.e. phonetic knowledge and skill) and developing "*the ability to put this competence in the production/reception of spoken utterances to express and understand meanings, to interpret and negotiate meaning in context and to engage in communicative activities*." (cf. Council of Europe 2001: Introduction; Also mentioned in Heyworth (2004: p. 19)

[3] Odlin (1989) gives an extremely useful historical review of "*language transfer*" where he adopts the following definition for all the discussions presented throughout this publication: "*Transfer is the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired."(p.27)*

[4] However, there has been a great deal of controversy regarding the role of language transfer in the interpretation of IL theory that whether it should be measured by native standards or treated only as one of the key processes creating a learner's distinct independent language system of its own. Johnson & Johnson (1999) points out that "*interlanguage theory did not then cut itself off from contributions from the L1; Selinker (1992) indeed calls **language transfer** (our emphasis) its quintessential notion. But it was how the learner's own system was created through transfer that counted, not the inefficiency with which the learner was mastering a target system."(* p.175)

In this paper, for purposes of practical pedagogical applications, particularly where the minimum standard of phonological performance should be easy intelligibility, we treat the phonology of Turkish-English IL both as a system in its own right which should be judged by L2 (native-like) phonological standards as well as a dynamic system developing over time towards L2 phonetic features. See also Endnote 6 below.

Therefore, we adopted the **BBC pronunciation** in this investigation as the norm against which the English pronunciation of L1 Turkish speakers was assessed. It is the form generally used by news readers of the BBC and has the advantage of being readily intelligible and acceptable within the English-speaking world. For comments on the preference of adopting the usage of the term *"BBC Pronunciation"* rather than the traditional usage of *Received Pronunciation (RP)* see Roach (2005, p. 2-7).

[5] *"The term **interference"** implies no more than what another term, **"negative transfer",** does,......"*: (Odlin (1997, p.26), i.e. *"Cross-linguistic influences resulting in errors, over-production, underproduction, miscomprehension, and other effects that constitute a divergence between the behaviour of native and non-native speakers of a language."* (Odlin (1989, p.197). Therefore, we use the notions of "negative transfer", "interference", "error", and "phonological deviance" interchangeably meaning all the same in this study.

[6] We take "interlanguage" to be equivalent for all practical purposes to Corder`s "transitional competence" (Corder 1971) and Nemser`s "approximate system" (Nemser, 1971). In all these cases one is concerned with formulating a "competence" model in the light of available "performance", i.e. deviant phonological features from BBC Pronunciation as found in our data (cf. Appendix).

[7] It needs to be emphasize that discussions in recent years about "English as an International Language" (or "English as a Lingua Franca "(ELF)) and their implications for the IL theory are beyond the scope of this paper for practical pronunciation teaching, which is based on BBC Pronunciation as a specific variety of English. For discussions on ELF cf. Jenkins (2006), (2007); Cruttenden (2008: Chapter 13) for a survey of the main issues, and the concept of an International English pronunciation.

[8] Celce-Murcia (2005) comments as follows: *"Having established that intelligible pronunciation is one of the necessary components of oral communication, the next issue is methodological: How can teachers improve the pronunciation of unintelligible speakers of English so that they come intelligible? This is a problem for Communicative Language Teaching, since proponents of this approach have not dealt adequately with the*

role of pronunciation in language teaching, nor have they developed an agreed-upon set of strategies for teaching pronunciation effectively." (p.8)

9 For a comprehensive survey of research on the nature of L2 pronunciation see Celce-Murcia (2005 p. 14- 29).

10 This model was first briefly introduced in Bayraktaroğlu (1989) (2008).

11 Johnson & Johnson (1999) reports that *"Interlanguage nowadays chiefly exists as a background concept that everyone takes for granted, or a par with description and prescription or the primacy of speech; Selinker (1992) points out that the concept of a 'between language' has been present from Lado onwards."* (p.175).

Therefore, in designing this model and the classification of distinct IL pronunciation features, the following classical works have been carefully taken into account: Fries (1945 and 1948), H.Wolff (1950), Haugen (1954), Stockwell and D.I.Bowen(1965), Agard and Di Pietro (1965),Valdman (1966), U.Weinreich (1953/1957), R.Lado (1957), W.G. Moulton (1962a)(1962b), K.Wiik (1965)

However, all these linguists who have talked about language transfer (i.e. interference phenomena) between the L1 and L2 have based their **predictions** of degrees of difficulty of learning phonological categories primarily on the **theoretical** (i.e. **"contrastive analysis")**, rather than **empirical (i.e. "error analysis")** constructs. Although we have been deeply inspired particularly with the models of Moulton (1962a) and Wiik (1969) in that their detailed taxonomy of classification of segmental phonemes are both at the phonemic as well as phonetic levels (for comments on Moulton's model see Odlin (1997, p.115-16)), our model differs from such classical works as being based on an empirical investigation (i.e. error analysis) which is believed to give better and more reliable results in the description of phonological features of Turkish-English IL.

12There have been many works done on Turkish-English IL sound transfer (i.e. L1 interference), usually called "pronunciation difficulties". However, these are mostly

carried out without distinguishing between phonetic and phonemic levels of descriptions and which are also predictive in their approach. Most notably, the article by Ian Thompson (1987, p.158-60) in a widely popular publication by Swan & Smith (1987, p. 158-160) where the editors clearly mention at the outset that *"they(we) have not tried to distinguish between phonetic and phonemic levels of description."* Likewise, Odlin (1989) points out that *"most attempts at classification of pronunciation errors have emphasized phonemic contrasts (e.g. Weinreich 1953/1968; Lado (1957). However, the evidence of phonetic transfer discussed earlier* (see p.113) *suggests that an adequate classificatory scheme must take into account other factors."* (p. 115)

Therefore, descriptions of sound transfer (interference) based solely on the phonemic level are inadequate. A more complete specification of phonemes in terms of their specific articulatory (i.e. productive) and auditory (i.e. perceptual-receptive-identification) features on the phonetic level is necessary. For example, saying that a 'new' phoneme in the L2 will be easier (or harder) than the L2 phonemes that are partially similar to the L1 phoneme is inadequate because of the over-simplification inherent in the statement. There can clearly exist a hierarchy of difficulties even among 'new' L2 phonemes and classifying them all together as 'new' is misleading. English /**θ** /**,** / **ð** /**,** and / **ʒ** / are all new phonemes for the Turkish speakers of English, yet / **θ** / and / **ð** / are significantly harder to learn than **/ ʒ /** due to the difficulties involved at the phonetic level of production and perception.

Furthermore, interference occurs not only because of the differences between the sound systems of L1 and L2 but also because of the differences in one-to-one sound-letter representations in the writing systems of L1 and L2.

[13] As a result, we set up our proposed model of the classification of phonemic and phonetic features of Turkish-English IL based on error analysis which we claim **full originality** on this aspect.

[14] For the purpose of our investigation, an *"error"* is defined in very general terms as any deviation from BBC Pronunciation which is recurrent and systematic. Corder (1971a) distinguishes between *"errors"* and *"mistakes"* . The latter are the random slips of the

tongue, or performance failures made by the speakers. They are not systematic and are of no significance in language learning. Therefore, error analysis was based primarily on recurrent, systematic errors that were made by a number of Turkish-English IL informants, and that could be readily traced to their sources, no matter whether they reflected defects in their knowledge of English Phonetics or whether they resulted from inadequate habit formation.

[15] Cf. Appendix

[16] Cf. Appendix

[17] Regarding the crucial importance of teaching pronunciation in a language course and its immense benefit to students in improving their speaking immeasurably and also their own understanding of spoken English see Harmer (2001, p.183-7)

Furthermore, there are two requirements for the teacher: the first, a sound knowledge of of phonetics (ideally both of L1 and L2) and equally being efficient in them; the second, being as perfect a model to students in this respect as he can make himself (Abercrombie, 1963, pp.28-30) (Wilkins, 1972, pp. 38-39) Bayraktaroglu, 1989) . Likewise, Gimson (1970) reports that *"the teacher has the added responsibility of serving as a model for his students, who, if they are young, will imitate equally well a correct or a faulty pronunciation. His aim therefore must be perfection in respect of all aspects of pronunciation."* (p. 3)

[18] On Turkish Phonetics and Phonology see Swift (1962) (1963), Underhill (1976), Bayraktaroğlu & Bayraktaroğlu (1992), Demircan (1979, 1980, 2000,2001), , Göksel & Kerslake (2005), Ediskun (1963), Kornfilt (1997)

[19] For a detailed discussion on the teaching of pronunciation, i.e. what to teach, when, and in what sequence, cf. Cruttenden (2008: Chapter 13) and Bayraktaroğlu (1989). Also cf. Celce-Murcia (2005, 12th Ed., pp.8-10) for a comprehensive list of different kinds of techniques and practice materials that have been used –and are still being used- to teach pronunciation as part of the Communicative Approach.

[20] Collins and Mees (2006) establish **hierarchy of errors** in terms of "*1. errors which lead to a breakdown of intelligibility 2. errors which give rise to irritation or amusement 3. errors which provoke few such reactions and may even pass unnoticed*" (p.186)

Generally speaking, by **"intelligible"**, we mean a pronunciation which can be understood with little or no conscious effort on the part of the listener. Abercrombie (1963) states that the aim of pronunciation teaching should have *"a limited purpose which will be completely fulfilled: the attainment of intelligibility"* (pp.36 -37).   Similarly, Gimson (1975) reports that "*if the essence of language is its grammar, communication by language clearly relies crucially on the effectiveness of the transmission phase, i.e. for our purposes, the easy intelligibility of the pronunciation…..Undoubtedly the minimum standard of performance which any ordinary learner should aim at is one which is easily understood by the native speaker of English".* (pp. 1-3). Also Cf. Endnote 7 for comments by Celce-Murcia (2005)

[21] Such corrective exercises are mainly of two types:

Contrast Drills: English words are listed parallel with other English words that differ from the first one in only one sound. The contrast between any given pair is a minimal contrast. Such contrast drills are the nucleus of all productive practice on pronunciation as they are used to overcome the phonemic type of errors (**Types 1(a), 1(b), 2(a), and 2(b)**) which cause unintelligibility. They have two important functions: they focus the Turkish speaker's attention precisely on the crucial phonemic distinctions that he must learn both to **hear** and **produce**; and they demonstrate that the distinctions are important to make, since otherwise the paired words, i.e. **thin** – **tin,** would be indistinguishable and hence lead to unintelligibility.

*Comparison Drills***:** These are lists of phonetically similar English and Turkish words which are intended to help the Turkish speaker grasp the specific phonetic nature of an English sound by comparing it closely with the most nearly similar Turkish sound. There is no necessary similarity in meaning between the words of the two lists, only similarity in sound. They could be used for increasing the phonetic awareness of the learners by establishing the precise direction that the Turkish speaker must take in modifying his

habitual patterns of pronunciation to conform with the restrictions of English phonetics. They are primarily for use in overcoming the phonetic and allophonic types of errors **(Types: 3(a), 4(a), 4(b), and 5(a))** both for **identification** and **production**.

22 For a detailed study of Orthographic Interference (i.e. negative transfer) for Turkish-English IL Speakers cf. Bayraktaroğlu (2008).

[23] For the Turkish Consonant and Vowel Charts and other Turkish phonetic features cf. Zimmer and Orhun (1999) in the *Handbook of the International Phonetic Association* (1999). Following is the orthographic representations of Turkish phonemes with their variable allophones:

a /a/ →[a],[ɐ],[ɐ̥],[ɑ],[aː],[ɑː]   **h** /h/→[ç],[x],[h]   **ö** /œ/→[œ̥],[ø̥],[œː]   **y** /j/→

b /b/→[b]   **ı** /ɯ/→[ɰ],[ɤ],[i]   **p** /p/→[pʰ]   **z** /z/→[z]

c /dʒ/→[dʒ]   **i** /i/→[i],[i̥],[iː]   **r** /r/→[ɹ],[ɾ]

ç /tʃ/→[tʃ]   **j** /ʒ/→[ʒ]   **s** /s/→[s]

e /ɛ/→[eː],[e̥],[ɛː],[ɛ̥],[æ],[æ̥]   **l** /l/→[lʲ],[ɫ]   **t** /t//→[t̪],[tʰ]

f /f/ →[f],[ɸ]   **m** /m/→[m]   **u** /u/→[ʊ],[uː],[ʊ̥]

g /g/→[g],[ɟ]   **n** /n/→[n̪],[ɲ],[ŋ]   **ü** /y/→[ẙ],[yː]

ğ –   **o** /ɔ/→[o̥],[ɔ],[ɔː]   **v** /v/→[β],[ʋ]

Aspiration [ʰ]: The Turkish voiceless plosives /p, t ,k/ whether in accented or unaccented syllables, are always accompanied by aspiration.

Lip rounding [ʷ]: In Turkish, there is close lip rounding throughout the articulation of the whole syllable containing any one of the rounded vowels (i.e. /ɔ/, /œ/, /u/, /y/). Furthermore, according to the principles of vowel harmony, any one of the four rounded vowels may appear in the first syllable of a word, and each following vowel in the next syllable is conditioned by the vowel immediately before it in the preceding syllable, i.e. a following close vowel is conditioned as either /u/or /y/ by the preceding rounded vowels /ɔ/, /œ/, /u/ and /y/. It is therefore possible that the lip rounding may operate in all syllables of a Turkish word.

Palatalization [ʲ]: There is palatalization of all Turkish consonants preceding and/or following front vowels (i.e. /i/, /e/, /œ/, /y/).

[24] Although /-ps/, /-ts/, /-tʃt/, /-mf /, / -nʒ/, /-lm/, /-ln/, /-lf/, /-lv/, /-ls/, /-fs/, and /-sk/ do not occur in Turkish, we were unable to discover in our empirical investigation any serious divergences from BBC Pronunciation on the part of the Turkish-English IL speakers in pronouncing such clusters. Therefore, on the theoretical level, this finding defies the predictive power of contrastive analysis ("strong form") which in turn confirms the reliability of our empirical study used in explaining the sources of already observed body of negative transfer (i.e. interference). For a further discussion on this topic, cf. Bayraktaroglu (1985)

[25] For discussions on **"fossilization"** cf**.** Gass & Selinker (2008 p. 14). Furthermore, the following entry in Wikipedia (http://en.wikipedia.org/wiki/Interlanguage_fossilasation) is most helpful:

 "A permanent cessation of progress toward the TL has been referred to as fossilization (Selinker, 1972). This linguistic phenomenon, IL fossilization, can occur despite all reasonable attempts at learning (Selinker, 1972). Fossilization includes those items, rules, and sub-systems that L2 learners tend to retain in their IL, that is, all those aspects of IL that become entrenched and permanent, and that the majority of L2 learners can only eliminate with considerable effort (Omaggio, 2001). Moreover, it has also been noticed that this occurs particularly in adult L2 learners' IL systems (Nemser, 1971; Selinker, 1972, Selinker & Lamendella, 1980.)"

[26]MacCarthy (1972) suggests that *"the fundamental reason why people in general don't speak foreign languages very much better than they do, is that they fail to grasp the true nature of the problem of learning to pronounce and consequently never set about tackling it in the right way. Far too many people fail to realize that pronouncing a foreign language is a skill – one that needs careful training of a special kind, and one that can't be acquired by just leaving it to take care of itself. I think even teachers of language, while recognizing the importance of a good accent, tend to neglect, in their practical teaching, the branch of study concerned with speaking the language."* (p.1-14)

27 Regarding the role of the teacher, Abercrombie (1963) remarks as follows: *" Is it, in fact, necessary for a language teacher to be a phonetician? I would reply that all language teachers, willy-nilly, **are** phoneticians. It is not possible, for practical purposes, to teach a foreign language to any type of learner, for any purpose, by any method, without giving **some** attention to pronunciation. And any attention to pronunciation **is** phonetics… it is in fact misleading to ask whether phonetics is necessary for language teachers; it is merely a question of how efficient their phonetics is to be…"(p.28-29)*

28 The following is the description of phonological performance required for each CEF level (Council of Europe (2001, p.116-7; On 'Pronunciation' p.153)).

	PHONOLOGICAL CONTROL
C2	*As C1*
C1	*Can vary intonation and place sentence stress correctly in order to express finer shades of meaning*
B2	*Has acquired a clear ,natural ,pronunciation and intonation*
B1	*Pronunciation is clearly intelligible even if a foreign accent is sometimes evident and occasional mispronunciations occur.*
A2	*Pronunciation is generally clear enough to be understood despite a noticeable foreign accent, but conversational partners will need to ask for repetition from time to time.*
A1	*Pronunciation of a very limited repertoire of learnt words and phrases can be understood with some effort by native speakers used to dealing with speakers of his/her language group.*

Users of the Framework may wish to consider and where appropriate state:

- what new phonological skills are required of the learner;
- what is the relative importance of sounds and prosody;
- whether phonetic accuracy and fluency are an early learning objective or developed as a longer term objective.

Appendix: Empirical Data and Procedures

Informants:

They were a homogeneous group (as far as possible) of fourteen Turkish-English IL speakers who were able to communicate in English with a reasonable high standard of accuracy. Although they represented different degrees of proficiency in L2 (i.e. English) pronunciation, and some of them occasionally made errors of usage involving grammar and vocabulary, they were either Turkish research students or visiting scholars at Cambridge University, both men and women in the age-range 25-40, and had studied English for some period of time. They all spoke the standard educated speech form of Turkish without any regional variation, and were all free from any speech defects, and none of them had any special training in phonetics. The aim was to find out general patterns of Turkish-English IL pronunciation and not the individual peculiarities, although at the transcription stage it was clearly not possible to know a priori which features of IL pronunciation were systematic and which purely idiosyncratic, and so all the recorded data were transcribed allophonically in detail.

Data and Procedures:

Techniques of "error analysis" were applied to the recorded specimens of fifteen minutes connected speech, a reading passage, forty sentences, and ninety-three isolated words for each of the fourteen Turkish-English IL informants. The recorded materials of the informants were then analysed and transcribed carefully in allophonic (narrow) transcription using the diacritics of International Phonetic Alphabet (IPA). In order to achieve objectivity, our transcriptions were checked by two other phoneticians, Dr. J. Baldwin of the Phonetics Department of the University College London and Dr. B. Comrie of the Linguistics Department, University of Cambridge.

BBC Pronunciation, which is readily intelligible and acceptable within the English – speaking world, was taken as the norm against which the IL pronunciation of the informants were assessed. No restrictions were imposed on the choice of data in our experimental procedures, which were not designed specifically to catch the divergences from BBC pronunciation (i.e. errors) that an *a priori* type of contrastive analysis would

predict, and thus were not intentionally biased in favour of the predicted pronunciation errors of the Turkish informants.

Samples of Analysed Data:

Abbreviations:

Selection of Data: **"SD"**

The Text: **"T"**

The Text in Phonemic Transcription: **"PT"**

The Text in Allophonic Transcription: **"TAT**"

A sample of Turkish-English IL pronunciation of an informant in allophonic transcription**: "TEAT**"

    I.   **Connected Speech** (fifteen minutes):

SD: The nearest approximation to conversation is an interview with the person whose speech is to be recorded, but there is the factor of mutual influence of speakers. Most speakers change their mode of expression according to the immediate circumstances, and in conversation there is always some mutual adjustment, because each of the two speakers tries to use a form that is likely to be more acceptable to the other. Moreover, as the purpose of investigation is not the interviewer's speech, but that of the interviwee, the latter was encouraged to do most of the talking and allowed to talk freely about his/her particular interest. This meant that the speaker would not speak under conditions of undue tension, and it also ensured that the language used was reasonably representative of what he/she would ordinarily say while talking on that particular subject. Later a portion of the recording – say seven or eight minutes' running time – was selected for narrow transcription. Following are the samples of connected speech of two different informants:

TEAT: ----[jä , i n ɹ i l i ʃ , dʒ œ r m ĩ n̪ , ɸ ɹ ę n tʃ . jo kʰ i n̪ tʃ y·s ʋ e n̪ o β d̪ ʉ m.
äj s i̪ ʰ ɐ d i̪ ʰ r ä̪ ʃ ü̃ n̪ , e n̪ ʰ a ɸ t̪ ʰ ɯ ɹ d̪ ę m äj s t̪ ʰ ɐ d i̪ ʰ ę l̩ i t̪ ʰ i l, b i t̪ ʰ ɸ
ɹ ę n̪ tʃ . ʋ ę n̪ äj
d̪ i s äj d̪ ɯ t̪ ʰ t̪ o̞ kʰ ɐ m t̪ o̞ i n g ɯ ł ɯ n t̪ ʰ äj b i ɹ ę n̪ t̪ o̞ s t ɐ d̪ i i n ɹ i l i ʃ
.]

TEAT: ----[ɸɔɹ ɛɟzɐmpʰɤɫ , t̪ʰɹɪ̈ëjns , b̪ɐsɤs , ɕːʊɾɪ̪t̪ʰɪn̪cʰ ɪs lʲë̈jt̪ʰ ɔɫ d̪ɯ t̪ʰɐ t̪ʰäjm . dʒɐst̪ʰ ʊɐn̪ t̪ʰɪ ŋ cʰ .

¸---- jäh ɪn̪ dʒœ·ɾmɐn̪i ɕʊɾɪt̪ʰɪn̪cʰ ɪs ɔ̃n̪ t̪ʰɐjm .

---- ɪn̪ ɸɹɑn̪s äj t̪ʰɪŋcʰ . mɔst̪ʰ ɔɸ d̪ɯ jüɾpʰɪn̪ kʰɐn̪t̪ɹɪs äj ʋ b̪ɪn̪ d̪ ɛ .

II. Set Passage for Reading :

SD: The procedure described above for the recording of connected speech gave the speakers perfect freedom to talk about any subject they liked, and the content as well as the language was expected to be varied. It was therefore considered desirable to have in addition a uniform standardised passage to be read aloud by all informants. It had to be a passage on a simple, everyday matter of common interest, but not 'topical' in nature, preferably in a colloquial style, and one which contained a number of lexical items presenting possibilities of misunderstanding in spite of the context. It was also desirable that it should contain all the English segmental phonemes and other phonetic features. Therefore, a passage which was specially designed for this purpose was used – an Australian folk-story taken from *English Phonetic Reader,* printed for the Department of Phonetics, University College London, for private circulation.

There would have been an advantage, of course, in allowing the speaker to choose his/her own passage. It would have ensured that the informant was not asked to read something which was either too difficult or too unfamiliar. But this sort of freedom had already been given to the speaker in the recording of connected speech, and some uniformity was needed here.

It has to be pointed out that the reading of a passage is not the same thing as connected speech. The ability to read well is different from the ability to speak freely on a subject of one's own choice, and the factor of reading ability comes in here. The speaker's ability to understand the meaning of the passage and his familiarity with the words and phrases contained in the passage also affect the informant's ability to read the passage well. Moreover, a speaker's pronunciation in reading is not always quite the same as in free

speech (Lado, 1971, pp.134-41). It was to overcome some of these problems at least partially that the material chosen was colloquial in style, and every speaker was asked to read the passage silently to himself before recording it. Following is an excerpt from the selected reading passage:

T: One day a woodpecker was eating honey, high up the branches of a tree. On the ground below sat a frog, watching and wishing for the feast.

At last, finding that the bird wasn't going to offer him any, he said "couldn't you spare a little of that honey for

me ?"

"Well, come up here", said the woodpecker, and you shall have all you want."

"But how shall I get up ?" said the frog. " I can't fly and I can't climb"…………..

PT: /ˈwʌn ˌdei | ə ˈwudpekə wəz ˈiːtɪŋ ˌhʌnɪ ,| ˈhai ʌp ɪn ðə ˈbrɑːntʃɪz əv ə ˌtriː | ɒn ðə ˈɡraʊnd bi ˌləʊ sæ t ə ˋfrɒɡ,| ˈwɒtʃɪŋ ən ˈwɪʃɪŋ fə ðə ˌfiːst. |

ət ˌlɑːst, | ˈfaɪndɪŋ ðət ðə ˈbɜːd ˈwɒznt ɡəʊɪŋ tu ɒfər ɪm enɪ, | hɪ sed " ˈkʊdnt jʊ ˈspeər ə ˈlɪtl əv ðæt ˈhʌnɪ fə ˌmiː ?"|

" wel ˈkʌm ʌp ˌhɪə " sed ðə ˌwudpekə,| " ən jʊ ʃl hæv ˈɔːl jʊ ˌwɒnt." |

" bət ˈhaʊ ʃl aɪ get ˋʌp ?" sed ðə ˌfrɒɡ.| "aɪ ˈkɑːnt ˌflaɪ | ən aɪ ˈkɑːnt ˋklaɪm./"……………

TEAT: [ʊ ɐ ɳ d̪ ë j ɘ β ʊ t̪ʰ pʰ ɛ cʰ ɯ ɹ ʊ ɐ s i t̪ʰ i ŋ h ɐ ɳ i h ä j ɐ pʰ i ɳ d̪ ɹ b i ɹ ɘ ɳ tʃ i z ɔ β ɘ t ɹ i · ̃ ɳ d̪ ɹ ɡ ɤ r ɑ · ɳ t̪ʰ b i ɫ ɔ s ɛ t̪ʰ ɘ f ɹ ɔ ɡ , ʊ ɐ t̪ ʃ i ɳ ɘ ɳ t̪ʰ ʊ i ʃ i ɳ ɸ ɔ d̪ i̩ ɸ i · s t̪ʰ .

ɘ t̪ʰ lʲ ɛ s t̪ʰ , f ä j ɳ d i ɳ d̪ ɛ t̪ʰ d̪ ɹ b œ r t̪ʰ ʊ ɐ z ɯ ɳ t̪ʰ ɡ ɔ i ɳ t̪ʰ ʊ ɔ ɸ ɤ ɹ h i m ɛ ɳ i̩ , h i̩ s ɛ t̪ʰ " kʰ ʊ d̪ u ɳ t̪ʰ j ʊ s p ɛ ɹ ɤ ɫ ɤ t̪ʰ ɤ ɫ ɤ ʊ d̪ ɛ t̪ʰ h ɐ ɳ i̩ ɸ ɔ ɹ m i ?"

" ʊ ɐ lʲ kʰ ɐ m ɐ pʰ h i j ɤ ɹ̩ " s ɛ t̪ʰ d̪ ɯ ʊ ʊ t̪ʰ pʰ ɛ cʰ ɯ ɹ , " ɐ ɳ t̪ʰ j ʊ ʃ ä ɫ h ɛ ʊ ɔ ɫ j ʊ

ʊ ɐ ɳ t̪ʰ ."

" ɓ ɐ t̪ʰ h ä ʊ ʃ ä ɫ ä j ɹ ɛ t̪ʰ ɐ pʰ ?" s ɛ t̪ʰ d̪ ɯ f ɯ ɹ ɔ ɡ . " ä j kʰ ɑ · ɳ t̪ʰ ɸ ̥ ɑ j ɐ ɳ ä j kʰ ɑ · ɳ t̪ʰ kʰ ɯ ɫ ä j m pʰ ." ………………..]

III.   Sentence Material (Forty in total):

SD: In ordinary conversation, a sentence is very often a complete utterance. It was therefore decided that a list of short, everyday sentences should be prepared. The sentences varied in length from three to eleven words, the average being five. It was

considered useful to have sentences of differing length with differing numbers of monosyllabic and disyllabic words. Both statements and other types of sentences were included. They were taken from various English pronunciation textbooks for foreign learners of English. Since in ordinary life all kinds of sentences are used, it was felt better to have variety rather than a rigid uniformity.

Each speaker was asked to look at each sentence first and then read it aloud in the normal way. He was asked to make a short pause after each sentence. This was done partly to avoid the reading of sentences as a series, and partly to provide time for transcribing when each sentence was played again separately. They are transcribed both in phonemic and in allophonic transcriptions in order to show their phonetic features in detail.

T: I'll see you on Thursday night.

PT: /aɪl ˈsiː juː ˈɒn ˈθɜːzdɪ ˈnaɪt/

TAT: [aˑɪɫ ˈsiː jʊ ɒn̪ ˈθɜˑzdɪ ˈnaˑɪt]

TEAT: [ä̆jiɫʲ sɪ̥ jü ɐn̪ t̪ʰœɾzd̪ëj n̪äjt̪ʰ]

T: It wasn't half as difficult as I thought it would be

PT: /it wɒzn̩t ˈhɒf əz dɪfɪkl̩t əz aɪ ˈθɔt ɪt ˌwʊd bɪ/

TAT: [it̪ wɒzn̩t ˈhɒˑf əz dɪfɪkl̩t əz aˑɪ ˈθɔˑt ɪt̪ ˌwʊd‿bɪ]

TEAT: [it̪ʰ ʊɐzn̩t̪ʰ hä̆ɸ ɛs d̪iɸɪ̥kʰɯl̪t̪ʰ ɐz äj t̪ʰot̪ʰ it̪ʰ ʊu̥d̪ b̥ɪ̥]

T: You can phone me any time of the day or night.

PT: /jʊ kən ˌfəʊn mɪ ˈɛnɪ ˈtaɪm əv ðə ˈdeɪ ɔ ˈnaɪt/

TAT: [jʊ kən ˌfəˑʊn mɪ ˈɛnɪ ˈtʰaˑɪm əv ðə ˈdeˑɪ ɔˑ ˈnaˑɪt]

TEAT: [jʲü cʰẽ̥n̪ ɸõn̪ mĩ ɛ̃n̪ĩ ˈt̪ʰɐjm o̥β d̪ɯ d̪ɛj ɔɾ n̪äjt̪ʰ]

T: I told him I was very pleased to see him.

PT: /aɪ ˌtəʊld ɪm aɪ wəz ˈvɛrɪ ˈpliːzd tə ˌsiː ɪm/

TAT: [aˑɪ ˈtʰəˑʊ ɫd ɪm aˑɪ wəz ˈvɛɹɪ ˈpl̥ʲiːzd‿tə ˈsiː ɪm]

TEAT: [äj t̪ʰɔ̥ɫ t̪ʰ him äj ʊɐ̥s ʊɛɾɪ̥ pʰɯlʲ̥ɪ̥st̪ʰ t̪ʰo sɪ̥ him]

T: I didn't think he'd mind me borrowing it for a while.

PT: /aɪ ˌdɪdn̪t̪ θɪŋk hid ˌmaɪnd mi ˌbɒrəʊɪŋ ɪt fəɹ ə ˌwaɪɫ/

TAT: [aˑɪ ˈdɪdn̪t̪ ˈθɪŋk hiˑd ˈmaːɪnd‿miˑ ˈbɒrəˑʊɪŋ ɪt fəɹ ə ˈwaː ɪɫ]

TEAT: [äj d̪id̪ɰn̪t̪ʰ siɲcʰ hi ɥd̪ mäjn̪t̪ʰ mi̥ bɔɹɔʊɪɲ it̪ʰ ɸɔɹ e̥ ʊ äjɫ̪]

IV.   **Isolated Words** (93 in total)**:**

SD: It was also considered desirable to have some single words material for our error analysis, because it would enable specific points of pronunciation to be transcribed, and would pin-point areas of potential difficulty in phonetic features at the word level where the 'context' is excluded. There are no contextual clues, and therefore, precision in the production of the speaker is important. A list of ninety-three words was prepared containing the chief allophones of the English phonemes. In a language like English, the distribution and the quality of vowels in words is very often determined by the stress pattern of words. It was, therefore, desirable to have words with different stress patterns containing different members of syllables. Samples are as follows:

T	TAT	TEAT
Reflects	[ɹɪ ˈf lʲ e k‿t s]	[ɹ̥ɛ ɸ ˈlʲ ę c s]
Automobile	[ˈɔ t ə m ə ˑʊ b iˑ ɫ];	[ɔ̨ ˑt̪ʰ ɔ m ɔ̨ ˈb i̧ lʲ]
Address	[ə ˈ d̠ ɹ e s]	[ą d̪ ˈ ɹ e s]
Cabs	[ˈk ʰ æ b z̥]	[ˈcʰ æ p s],
Seeds	[ˈs iˑ d z̥]	[ˈs iˑ d s]
dramatic	[d̠ ɹ ə ˈ m æ t ɪ k]	[d̪ ɰ ɹ a m ɐ ˈ t̪ʰ i cʰ]
Strengths	[ˈs t̠ ɹ e ŋ θ s]	[ˈs t ɹ̥ ę ɲ t̪ s̪]

Accidental	[ˌæ k s ɪ ˈd e n t ‿ɫ]	[e cʰ s i d̪ e n̪ ˈt̪ʰ ɯ ɫ]
Instincts	[ˈɪ n s t ɪ ŋ k‿t s]	[i n̪ s̪ ˈt̪ʰ i ɲ cʰ s]
Lengthened	[ˈ lʲ e ŋ θ n d̥]	[ˈ l̥ e̥ ɲ ˈt̪ʰ ɤ n̪ t̪ʰ]

V. Intelligibility Test

It was desirable to test whether some of the important phonological contrasts of L2 were maintained by the Turkish-English IL speakers and how far divergences from BBC English led to confusion and unintelligibility between minimal pairs or between other words likely to be confused.

Therefore, for the purpose of this investigation, an intelligibility test was devised as a central part of this study. A list of 108 single words, which are distinguished simply by one sound segment from a different word (i.e. part of a minimal pair) was prepared, and then recorded by the fourteen Turkish informants. Each informant was listened to by four different L2 speakers (totalling fifty-six listeners) who were left free to write down any word they heard or even to leave the item without giving any response. There were no contextual clues in such single words, and therefore, precision in the production of the speaker and identification on the part of the hearer were all-important. Catford (1967, p.149) points out that the real test of the efficiency of an utterance is its intelligibility and effectiveness in "crucial contexts" which provide a minimum of clues.

Our aim was not to measure intelligibility by scores, or to find out the most and least intelligible speakers; but simply, for our practical purposes, to identify the pronunciation errors causing total unintelligibility which were common to all of the Turkish informants. However, the overall percentage of each error was calculated to give an idea of its frequency among all the errors occurring.

The linguistic experience and the cultural background of a listener are important factors for the attainment of intelligibility. It is clear, for instance, that an Englishman who has

had long experience in dealing with Turkish speakers' English is likely to understand Turkish-English IL speakers more readily than one who lacks such experience. He has what Catford (Ibid.149) calls a lower 'threshold of intelligibility' for foreign words.

It is for this reason, therefore, that the 56 listeners, both men and women, were native speakers who were not very familiar with foreign accents, and had had no experience at all with Turkish-English IL speakers. They included a large number of undergraduates, research students, lecturers, and assistants al studying or working at Cambridge University and were all speakers of BBC English.

Finally, in order to assess the reliability of the recorded single word list in the intelligibility test, a controlled experiment was carried out between English speakers and listeners. Two native speakers with BBC pronunciation – one man and one woman – were recorded and their recordings were played back to two listeners, one man and one woman, who were again native speakers with BBC pronunciation. Words which were unintelligible were taken off the list, and reliability was achieved in this way.

Summary of results of the intelligibility test of English segmental phonemes within the context of isolated words which are parts of Minimal Pairs:

Turkish-English IL Pronunciation of:	As Identified by L2(Native) Speakers:	Rate of %
/ ð /	/ θ /	92.9
/ θ /	/ ð /	80.4
/ -b z /	/ -p s /	73.2
/ θ /	/ t /	71.4
/ ð /	/ d /	67.9
/ ɔː /	/ ɒ /	63.4
/ v /	/ w /	63

/ e ə /	/ e /	63
/ -d ʒ /	/ - tʃ /	62.5
/ u: /	/ ʊ /	62.5
/ w /	/ v /	57.1
/ -b /	/ -p /	57.1
/ æ /	/ e /	54.4
/ -g /	/ -k /	53.6
/ -z /	/ -s /	49.6
/ -ŋ /	/-ŋk /	47.3
/ -d /	/ -t /	47.2
/ d /	/ ð /	47
/ i: /	/ɪ /	45.5
/ -gd /	/-kt /	42.9
/ ɒ /	/ ʌ /	41.1
/ s /	/ θ /	36.6
/ -ŋ /	/ -n /	34.8
/ e /	/ æ /	31
/ ʊ /	/ u: /	23.2
/ ɒ /	/ ɔ: /	23.2
/ ɪ ə /	/ i: /	23.2
/ ʌ /	/ ɒ /	21.4
/-v /	/ -f /	21.4
/ ɪ /	/ i: /	20.4
/ θ /	/ s /	19.6
/ v- /	/ b- /	17.9
/ ð /	/ t /	17.9
/ z /	/ θ /	17.9
/ t /	/ θ /	14.3
/ d /	/θ /	7.1
/ θ /	/ d /	5.4

References

Abercrombie, D., (1973, New Edition). *Problems and Principles in Language Study, Longman*

Agard, F.B., and Di Pietro, R.J. (1965), *The Sounds of English and Italian,* The University of Chicago Press

Bayraktaroğlu S**.** (2008). Orthographic Interference and the Teaching of British Pronunciation to Turkish Learners, *Journal of Language & Linguistic Studies,* Vol.4 No: 2, p. 107-43

-----(1992). On sources of pronunciation difficulties in foreign language learning. In R.A. Rodriguez, R.L.Ortega, F.MacArthur (Eds.), *New Directions in Foreign Language Teaching Theory and Practice* (103-9)*,* ACTA SALAMANTICENSIA MANUALES UNIVERSITARIOS 45, Ediciones Universidad de Salamanca. Also (1985) In *Anglo-American Studies.* V(2), 115-121.

-----(1989). The Teaching of Pronunciation, *Anglo-American Studies,* (IX) 2, 103-116

-----(1979). Yabancı Dil Öğrenim Güçlükleriyle İlgili Araştırma Yöntemleri. *İzlem: Yabancı dil Öğretimi Dergisi,* 3, 3-15, Tüm Üniversite ve Akademi Okutmanları Derneği (TÜMOK) yayını

-----(1978). Trends in Applied Linguistics and Language Learning: Contrastive Analysis, Error Analysis, and Interlanguage . *Boğaziçi Üniversitesi Dergisi,* 6, 55-73.

Bayraktaroğlu, A., and Bayraktaroğlu, S. (1992). *Colloquial Turkish,* London and New York: Routledge

Catford, J.C. (1967) Intelligibility. In W.R.Lee (ed.), *ELT Selections 2* (142-50). Oxford: Oxford University Press

Celce-Murcia, M., Brinton, D.M. and Goodwin, J.M. (2005). *Teaching Pronunciation: A Reference for Teachers of English to Speakers of Other Languages.* Cambridge: Cambridge University Press.

Chambers, J.K. (1995), *Sociolinguistic Theory*, Oxford: Blackwell.

Corder, S. P. (1971). Idiosyncratic dialects and error analysis. *International Review of Applied Linguistics, 9, (2),* 147-160.

--------(1974), The Significance of Learners' Errors. In Richards ,J.C. (1974,ed.) *Error Analysis: Perspectives on Second Language Acquisition* (p. 19-27) London:Longman .

--------- (1978). Language-learner language. In J. C. Richards (Ed), *Understanding second and foreign language learning* (pp. 71-92). Rowley, MA: Newbury House.

--------- (1981). *Error analysis and interlanguage.* Oxford: Oxford University Press.

Collins, B. and Mees, I.M. (2006), *Practical Phonetics and Phonology,* London and New York: Routledge

Council of Europe (2001**),** *Common European Framework of Reference for Languages: Learning, teaching, assessment,* Cambridge: Cambridge University Press.

Cruttenden, A. (2008 ^{7th} edn; ed.). *Gimson's Pronunciation of English.*London: Edward Arnold

Denison, N. (1961). *Phonetics and Phonemics in Foreign Language Teaching.* Proceedings of the IV International Congress of Phonetic Sciences, Helsinki: 586-89

Demircan, Ö. (1979). *Türkiye Türkçesinin Ses Düzeni: Türkiye Türkçesinde Sesler.* Ankara: Türk Dili Kurumu Yayınları

-------(1980). *Yabancı Dil Öğretimi Açısından İngilizce'nin Vurgulama Düzeni.* İstanbul: İstanbul üniversitesi Yayınları No: 2773; Yabancı Diller Yüksek Okulu Yayınları No:4

-------(2000). *Türkçe'nin Ezgisi.* İstanbul: Yıldız Teknik üniversitesi Vakfı

-------(2001). *Türkçe'nin Ses Dizimi: Sesler, sesbirimler, ayırıcı özellikler, ses değişimleri, vurgu, vurgulama, ezgi, ezgileme.* İstanbul: Der Yayınları

Ediskun,H. (1963**).** *Yeni Türk Dilbilgisi.* İstanbul: Remzi Kitapevi

Fries, C. C. (1945). *Teaching and Learning English as a Foreign Language.* Ann Arbor, Michigan: University of Michigan Press.

 --------------(1948) As we see it. *Language Learning,* 1, 12-16

Gass,S.M. & Selinker, L. (2008, 3rd edn.). *Second Language Acquisition.* New York and London: Routledge

Gimson,A.C. (1970,2nd edn.). *An Introduction to the Pronunciation of English,* London: Edward Arnold.

Göksel, A .& Kerslake C.(2005), *Turkish: A Comprehensive Grammar.* London and New York: Routledge

Harmer, J. (2001; 3rd edn.). *The Practice of English Language Teaching,* Longman

Haugen, E. (1953). The Norwegian Language in America*: A Study in Bilingual Behavior,* Vol.II*,* Philadelphia, Pennsylvania

Heywood, F. (2004). Why the CEF is important. In Morrow, K. (2004, ed.) *Insights from the Common European Framework* (12-21)*,* Oxford: Oxford University Press

Jenkins, J. (2006), Points of view and blind spots: ELF and SLA, *International Journal of Applied Linguistics,* Vol.16 No.2, 138-62

(2007), *English as a Lingua Franca: Attitude and Identity.* Oxford: Oxford University Press

Johnson,K. & Johnson,H. (1999, Eds.) *Encyclopedic Dictionary of Applied Linguistics.* Oxford: Blackwell Publishers

Krashen, S. (1985). *The Input Hypothesis: Issues and Implications.* London:Longman

Kornfilt, J. (1997). *Turkish*. London and New York: Routledge

Lado, R., (1957). *Linguistics Across Cultures: Applied Linguistics for Language Teachers.* Ann Arbor: The University of Michigan Press

Lightbown, P.M and Spada. N (2008 3rd edn.**).** *How Languages are Learned.* Oxford: Oxford University Press.

Mitchell,R. & Myles,F,(2004, 2nd edn.).*Second Language Learning Theories.* London: Hodder Arnold

Morrow, K. (2004 ed.), *Insights from the Common European Framework,* Oxford: Oxford University Press

Moulton, W.G. (1962a). *The Sounds of English and German.* Chicago: The University of Chicago Press

----(1962b), Toward a Classification of Pronunciation Errors, *Modern Language Journal,* 46, 101-109

Nemser, W. (1971). Approximate systems of foreign language learners. *International Review of Applied Linguistics, 9, 115-23.*

Odlin,T. (1989), *Language Transfer: Cross-linguistic influence in language learning,* Cambridge:Cambridge University Press.

Omaggio, A. (2001). Teaching language in context. *Proficiency oriented instruction.* (3rd ed.). Boston, MA: Heinle & Hainle Publishers

Richards ,J.C. (1974,ed.) *Error Analysis: Perspectives on Second Language Acquisition*, London:Longman .

Ritchie, W.C. (1968). On the explanation of phonic interference. *Language Learning, 18, 183-98*

Roach, P. (2009.4th ed.). *English Phonetics and Phonology.* Cambridge: Cambridge University Press

Saville-Troike, M. (2006), *Introducing Second Language Acquisition.* Cambridge: Cambridge University Press

Selinker, L. (1972). Interlanguage. *International Review of Applied Linguistics, 10, 209-30*

------(1992). *Rediscovering Interlanguage.* London: Longman

Selinker, L., & Lamendella, J. T. (1980). Fossilization in interlanguage learning. In K. Croft (Ed.), *Reading on English as a second language* (pp. 132-143). Boston. MA: Little, Brown and Company.

Selinker, L., & Lakshamanan, U. (1992). Language transfer and fossilization: The "Multiple Effects Principle". In S. M. Gass, & L. Selinker (Eds.), *Language transfer in language learning* (pp. 197-216). Amsterdam: John Benjamins.

Stockwell, R. and Bowen, D.J. (1965). *The Sounds of English and Spanish.* Chicago: The University of Chicago Press

Swan, M. & Smith, B.(1987.Eds.). *Learner English: A teacher's guide to interference and other problems*. Cambridge: Cambridge University Press

Swift, L.B. (1962) Some Aspects of Stress and Pitch in Turkish Syntactic Patterns. In *American Studies in Altaic Linguistics,* Indiana University Uralic and Altaic Series, 13 pp.331-41

------------(1963) *A reference Grammar of Modern Turkish.* Bloomington: Indiana University Uralic *and Altaic Series, 19*

Thompson, I. (1998), Turkish Speakers. In Swan, M. & Smith, B. (1987.Eds.). *Learner English:A teacher's guide to interference and other problems (*158-60). Cambridge: Cambridge University Press.

Underhill, R. (1976). *Turkish Grammar.* Cambridge Massachusetts and London: The MIT Press

Valdman, A., (1966, ed) *Trends in Language Teaching* . New York and London: McGraw Hill

Wardhaugh, R.(1970**).** The Contrastive Analysis Hypothesis. *TESOL Quarterly, 4(2)*

Weinreich, U. (1953). *Languages in Contact: Findings and Problems.* New York: Publications of the Linguistic Circle of New York,1). Reproduced (1974) . The Hague: Mouton

(1957). On the Description of Phonic Interference, *Word,* 13, 1-11

Wiik, K. (1965). *Finnish and English Vowels: A comparison with special reference to the learning problems met by native speakers of Finnish learning English*. Turku: Turun Yliopisto; Annales Universitatis Turkuensis, B 94.

Wilkins, D.A. (1972). *Linguistics and Language Teaching.* London: Edward Arnold

Wolff, H., (1950). Partial Comparison of the Sound Systems of English and Puerto Rican Spanish, *Language Learning,* 3, 1 and 2, 38-41.

Zimmer,K. and Orgun,O. (1999). Turkish, *Handbook of the International Phonetic Association: A Guide to the Use of the International Phonetic Alphabet.* Cambridge: Cambridge University press

Prof. Dr. Sinan Bayraktaroğlu is a professor of linguistics. He has been studying on phonetics and phonology for years. He is currently teaching at Beykent University.