

# An Account of Iranian EFL Pronunciation Errors through L1 Transfer

Shiva Seddighi

Shiraz University, Iran

fsadighi@rose.shirazu.ac.ir

## Abstract

In light of the fact that L2 pronunciation errors are often caused by the transfer of well-established L1 sound systems, this paper examines some of the outstanding phonological differences between Persian and English. Comparing segmental and supra-segmental aspects of both languages, this study also discusses several problematic areas of pronunciation facing Iranian learners of English. To reach such a goal, thirty EFL learners were randomly selected from three levels of beginning, intermediate, and advanced students enrolled for the Fall term in 2008 in one of the private institutes in Shiraz. Their pronunciations of a list of 40 words and 8 sentences were analyzed through read-aloud task followed by an interview. The words have been recorded through a computer-based files adjusted for voice. The result of the data analysis indicated that our EFL learners at three levels confront considerable problems in areas that are absent in their mother tongue or converged into one item which is technically termed as coalescence. In order to compensate for the difficulties encountered by our EFL learners, we as teachers should integrate pronunciation teaching in our classroom syllabi so that they will become conscious of the differences in the sound system of the two languages. In this way, the Persian learners of English will be helped to become proficient speakers of English with rare or no residue of foreign accent in the pronunciation of target words, phrases, or sentences, thereby leading to more intelligibility of their utterances.

**Keywords:** L1 Transfer, EFL, Interference, Error Analysis

---

Received: March 2009; Accepted: January 2010

## **1. Introduction**

Most English Native speakers believe that as soon as ESL/EFL learners such as Japanese and Chinese, etc. speak, their foreign accents are recognized.

Likewise, the sound patterns or structures of their native languages can affect the speech or production of their second/foreign languages.

Avery and Ehrlich, (1992, cited in Ohata, 2004) believe that the foreign accent of non-natives can be due to the influence of their native languages. It is also stated that the pronunciation errors made by second/foreign language learners are not random errors to produce unfamiliar sounds, but rather reflections of the sound inventory, rules of combining sounds, and the stress and intonation patterns of their first languages (Swan and Smith, 1987, cited in Ohata, 2004).

Although contrastive analysis has often been questioned for its inadequacy to predict the transfer errors that learners will make in actual learning contexts (Whitman and Jackson, 1972), it cannot be easily denied that “such interference does exist and can explain difficulties” (Brown, 1994, p. 200), especially in the phonological aspects of second/foreign language learning. In this sense, the significance of contrastive analysis is not necessarily in the predictability of transfer errors, but in the explanation of learner errors that teachers may face in their daily practices (Celce-Murcia and Hawkins, 1985, cited in Ohata, 2004).

In line with the above contentions, this paper examines some of the significant phonological differences between Persian and English by focusing on segmental and supra-segmental aspects of both languages, and through comparison between the two languages, this study also points out several problematic areas of pronunciation encountered by Iranian learners of English.

## **2. Review of Literature**

Foreign language teachers have always thought of the sources of learners' errors in their written productions. In order to prove such a thing they tried to write down the sources of these errors by contrasting their native language and the target language through their observations of the students' performance (Kelly, 1969).

Jespersen (1912), Palmer (1917) and especially Fries (1945) assume that native language influences the second language acquisition. They also stated that the behaviorist approach talks about the learning a foreign language as a series of habits and reinforcement. Errors which can be caused by the transfer of first language habits are both useful and harmful (Lado, 1957).

Contrastive Analysis has been based on the fact that second/foreign language learners will tend to transfer the formal features of first language to their second/foreign language utterances (James, 1981). Learning will be facilitated if the first and the second language are similar, but if they are different, learning will be impeded. In the first case, there is positive transfer and in the second, negative transfer.

The notion of "transfer" has created some difficulties itself since it is a controversial notion. It was defined differently by different people. Lado (1957) and Fries (1945) defined transfer as the imposition of native language information on a second language utterance or sentence, but for Odlin (1989) it refers to cross-linguistic influence.

Schachter (1983, 1992) has considered the fact that learners may have imperfect knowledge of the second language and she even proposed that transfer is not a process at all, but rather a constraint on the acquisition process. Odlin (1989, p.27) has brought some observations about what transfer is not and concluded that "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". And then he stresses that it is only a working definition. Even recently, Pavlenko and Scott (2002) as cited in Ahmadvand, M. (n.d.) argued that transfer is not unidirectional but bidirectional and simultaneous that is shown by paradigmatic and syntagmatic categories. All this indicates the degree of the complexity of the notion of transfer without any consensus.

According to their studies and in order to prevent errors, contrastive analysts compared first language and second language to find similarities and differences and consequently to predict areas of difficulties for learners. In other words, Contrastive Analysis talks about similarities and differences between languages, explaining and predicting problems in second/foreign language learning and finally developing course materials for language teaching (Mirhassani, 2003). In spite of the fact that CA was found to be successful in foreign language teaching, but because of its limitations it was not practiced much; however it is still alive and a lot of advocators have adhered to it and pursued its goal.

Despite the fact that some research has been carried out in the realm of contrastive analysis on Persian learners of English, there are still some gaps which need further investigations. Strain (1968) has worked on a contrastive study on the Persian and English sound systems. The production of English relative clauses by Persian, Arabic, Chinese and Japanese students has been analyzed by Schachter (1982). She found that Chinese and Japanese produced fewer relative clauses than did the Iranian and Arab students. The reason was because of the differences between Chinese and Japanese on the one hand and English on the other. Schachter (1982) also did a study and considered the

### *An Account of Iranian EFL Pronunciation Errors ...*

presence of pronouns in the English inter-language of Persian speakers as transfer.

Later CA gave way to Error Analysis (EA) with more emphasis on errors and it came into vogue in the 1970s, Ellis (1994). Likewise, Corder (1974) states there are different stages in EA research: collection of a sample, identification of errors, description of errors, explanation of errors, and evaluation of errors.

Another controversial issue is the classification of errors because the experts do not have the same definition for it. Corder (1974), for instance, introduced a framework for describing errors according to their systematicity.

Dulay, Burt and Krashen (1982) provided taxonomy of errors: omissions, additions, misinformation, and dis-orderings. Taylor (1986) classified the sources of errors as psycholinguistics, sociolinguistics, epistemic, or in discourse (Ahmadvand, M., n.d.).

Following the above lines of research, the researcher in this study has focused on the classification of errors in pronunciation committed by the students based on the linguistic processes common in human natural languages.

What makes this study distinct from the previous studies is (1) to explore the errors in the EFL learners' inter-language in order to locate their sources and (2) to classify the students' errors into distinct linguistic processes (e.g. coalescence, epenthesis, etc.) common in natural languages.

## **3. Methodology**

### **3.1. Participants**

This is a controlled type of case study performed on the assessment of 30 Iranian learners of English at three levels of proficiency; i.e., beginning, intermediate, and advanced. All the participants were female monolingual and

native speakers of Persian language. Participants were between the ages of nineteen to thirty- five as is illustrated in the following table:

**Table 1. Distribution of the participants**

Level of prof.	Number of students	Age
Beginning	10	19- 24
Intermediate	10	24-28
Advanced	10	28-35

### 3.2. Procedure

The participants were examined in a quiet setting in one session lasting approximately fifteen minutes. Each subject had to give a short lecture about herself and then a list of vocabularies was shown and specific words and sentences were pointed out to be read. Their pronunciation was analyzed through read-aloud tasks (a word list containing forty words and eight sentences) and interviews. All forty words had been recorded as computer-based voice files and adjusted for noise. Their speech was transcribed for analysis.

## 4. Results

### 4.1. Segmental Pronunciation Difficulties

#### 4.1.1. Vowels

In the case of [ə], it seems that all three groups of the participants have problem pronouncing the word *ago*. They replace [ə] with [e] as they have it in their mother tongue. Likewise, the last vowel in *character* was enunciated as [e] instead of [ə]. Sometimes, when they try to omit the sound [ə], they find it

### *An Account of Iranian EFL Pronunciation Errors ...*

difficult to articulate as in the case of final consonant clusters. Subjects were asked to read the word *mechanism* and *magnetism* pronounced as [mekɑ:nɪsm] and [mægnɛtɪsm]. All of them ignored [ə] between the last two consonants.

However; the subjects tend to add the vowel [e] between the two consonants in the initial consonant clusters. The word *practice* is a case in which all of the subjects uttered it as [pɛræktɪs]. Phonologically speaking, this process of vowel insertion between the two consonants is called “epenthesis”.

Similar to the replacement in the word *mechanism*, they substitute [ə] with [ɑ:] and [æ] with [ɑ:] in the word *immorality*. The same problem is observed in the word *character*, in which the first and second vowels ([æ] and [ɪ] respectively) were pronounced as [ɑ:]. Furthermore, the second vowel in *magnetism* was pronounced as [e], whereas the correct form is either [ɪ] (according to Longman Dictionary) or [ə] (according to Webster Dictionary). Similar to the diphthong [eɪ], the elementary students pronounced that diphthong in *navy* as [nævɪ] and the intermediate students as [neveɪ]. Only the advanced students were able to pronounce it correctly. However, they made use of overgeneralization and vocalized the word *advantage* as [ædvænteɪdʒ].

In the same manner the word *lazy* was pronounced [lezi] by the beginners. The students in beginning and intermediate levels made use of sound-symbol correspondence and enunciated the word *said* as [seɪd] which was not the case for the advanced level students. It was observed that the diphthong [aʊ] created many difficulties even for the advanced learners. For example, *know*, *brought*, *other*, *low*, and *overcome* which was pronounced as [naʊ], [br aʊt], [aʊder], [laʊ], and [aʊvɛrcʌm]. The same phenomenon was observed with the beginners who pronounced *draw* as [draʊ].

### 4.1.2. Consonants

In the situation of sound-symbol correspondence, the subjects in the beginning level pronounced *chemistry* as [tʃemistrɪ], whereas the other two groups vocalized it correctly.

The other point of difficulty for EFL learners is pronunciation of the past morphemes (ed) having three allomorphs namely: [t], [d], and [ɪd]. No matter in which level the subjects are, they articulated the past morpheme as [d].

*Passed* and *watched* are the instances which were pronounced as [pæsd] and [vʌtʃd], respectively. In the present morpheme observed in the word *teaches*, none of them committed errors in pronunciation.

The rounded velar glide [w], as in *went*, does not exist in Persian, so they tend to articulate the sound as [v] in the word *watched*.

Interdental sounds such as [θ] and [ð] which do not exist in Persian are pronounced as [t] and [d] shown in the words *thin* and *the* by all of the subjects.

The velar nasal [ŋ], in the final sound of *sing*, is another manifestation of difficulty encountered by EFL learners. All of the participants pronounced *interesting* and *meeting* as [ɪntərəstɪŋ] and [mi:tɪŋ].

With respect to initial consonant cluster which does not exist in Persian, the elementary level students altered the position of the sounds in the word *bridge* and uttered it [brɪdʒ].

Finally; the emotional word *oh* was uttered as [oh] by all of them.

## 4.2. Supra-segmental Difficulties

### 4.2.1. Stress Pattern

The beginners put the stress pattern on the second syllable of three-syllable words resulted in incorrect stress assignment. Two cases in point are the words



*An Account of Iranian EFL Pronunciation Errors ...*

*chemistry* and *indirect* where the stress is placed on the first and third syllable, respectively.

The intermediate level students put the stress on the second syllable in the word *navy* which should be placed on the first syllable. Furthermore, the stress in the word *chemistry* was placed on the third syllable.

Among two syllable words, the advanced students changed the correct stress pattern. For instance, the stress of the word *navy* was placed on the second syllable and the word *correct*, on the first syllable which is not the case.

In the group of three syllable words, the words *character* and *interesting* caused difficulty. They put the emphasis on the second syllable whereas the correct pattern should be on the first syllable. For the words that end with *-age* such as *advantage* and *privilege*, they placed stress on the last syllable wrongly.

Apart from some specific problems associated within each group, there are some problems that are shared by all of them. The tendency toward placing the strong 'accent' on the final syllable is illustrated in the word *meeting* which is pronounced as [mit'ing]. Another example, subjects encounter difficulty is the nominal compounds such as *greenhouse* where the stress is placed on the first syllable of these compounds; yet they confuse it with the house colored green and consequently utter it with the stress on the second word. In the same vein, *oh lazy 'boy!* is uttered as *oh, 'lazy boy!* which means enunciating vocative expressions with the primary stress on the first syllable which is not right.

Another point of difficulty encountered by the subjects is the questions containing negative tags with the stress on the negative element: *Mehdi is clever, isn't he?* whereas the stress should be placed on the verb *is*. Also, in positive tag questions they stress the pronoun rather than the modal verb. An example is the sentence *Parvin didn't work hard, did she?* Similarly, in the

sentence *I don't like it* the subjects stress the word *don't* rather than *like* which leads to two different pragmatic meaning.

#### 4.2.2. Intonation Contours

Subjects tended to put the primary sentence accent on the question particle in the sentence, *who took the banana?* instead of placing it on the *banana*. This kind of error may lead to two different interpretations by the native speakers of the language i.e., either as rhetorical for gaining more information or as a request for repetition. It seems that they did not have difficulty recognizing rising and falling intonation in yes/no questions and in declarative and wh-questions.

### 5. Discussion

#### 5.1. Vowels

Comparing the Persian vowel system with that of English reveals a significant difference in the following area: the number of vowels, as illustrated in the tables given below.

Persian Vowels

Tongue Height	Part of Tongue		
	Front	Centre	Back
High	i: U		
Mid			

*An Account of Iranian EFL Pronunciation Errors ...*

Low	e	O
	æ	ɑ

**English Vowel Chart for Comparison**

Tongue Height	Part of Tongue		
	Front	Centre	Back
High	i: ɪ		ʊ u
	e	ə	ɔ
		ʌ	ɑ

There are six vowel sounds in the Persian language. Three of them are long and the other three are short. The three long vowels are [i:], [u], and [ɑ]; the three short vowels are [æ], [e], and [o]. The English language has eight diphthongs /ɪə, eə, uə, eɪ, aɪ, oɪ, aʊ, əʊ/, each of which is a combination of two mono-phthongs one gliding into the other and naturally longer than a pure vowel, whereas, there are only two diphthongs in Persian: [eɪ] and [ou]. All of the Persian vowel sounds are the same or very similar to English vowels; however, English has several vowels that do not exist in Persian which is the

cause of difficulty. These include [ɪ] as in *bit*, [ʌ] as in *but*, [u] as in *book*, and [ə] as in the middle vowel sound in *sympathy*.

It seems that the problems associated with the use of [eɪ] and [ou] originate in the learners' native language. A close look at their speech reveals a great deal of deviant expressions and pronunciation, one can detect all kinds of grammatical, lexical, and phonological errors. It was seen that the deviant utterances reflect the grammatical structure of Persian, i.e; students are automatically using their knowledge of Persian in English as it can be observed in the overgeneralization of some of the diphthongs in English and uttering them as [eɪ] or [ou]. The reason is that they have only those two diphthongs.

The Persian learners of English are often tempted to use the more general items for the more specific ones, thus producing deviant expressions.

Furthermore, to use the well-known three-circle metaphor (Kachru, 1992), Iranian people do not belong to the inner circle; most of them are in the expanding circle and some in the outer circle who do not get opportunities to hear and speak English. Consequently, unlike people who fall within the inner circle, expanding circle members are primarily visual learners, not auditory learners. Learners remain as shy at the exit level as they were at the entry level.

Another reason why Iranian students, for example, do not try to speak English is their constant fear of instant teacher correction. As teachers we need to understand and remember the importance of indirect and positive feedback.

Clearly, such feedback has encouraging effect on the learners and instills confidence in them. In short, the first priority in such a situation is to make the learners feel comfortable with the language and eradicate the fear of making mistakes. Once the learners are at ease with the teacher and the language, half the battle is won.

## 5.2. Consonants

Persian Consonants

		Bilabial	Labiodental	Alveolar	Palatal	Velar	Glottal
Stops	Voiceless	p		T		k	ʔ
	Voiced	b		D		g	
Fricatives	Voiceless		F	S	ʃ	x	H
	Voiced		V	Z	ʒ	q	
Affricates	Voiceless				tʃ		
	Voiced				dʒ		
Nasals		m		N			
Liquids				r, l			
Glides					j		

There are 23 consonant sounds in Persian, most of which are also found in English. The velar fricatives [x] and [q] are the only Persian consonants that do not occur in English. Conversely, there are four English consonants that do not exist in Persian. These sounds are the interdental [θ] and [ð], as in *thigh* and *thy*, the rounded velar glide [w], as in *went*, and the velar nasal [ŋ], as in the final sound of *sing* which are pronounced as [t, d, v, ng] respectively by Iranian learners. In the case of initial consonant clusters they insert a vowel in the beginning (epenthesis) and pronounce [st] as in *street* as [estri:t].

## 5.3. Stress Pattern

Stress means prominence in pronunciation normally produced by four factors: 'loudness' of voice, 'length' of syllables, 'pitch' related to the frequency of

vibration of the vocal folds as well as to low/high tone and ‘quality’ of vowels functioning individually or in combination (Roach 2000).

English words in isolation or in connected speech naturally receive stress that eventually results in intonation carrying information over and above that which is expressed by the words in the utterance. Hence, English is a stress-timed language possessing a speech rhythm in which the stressed syllables recur at equal intervals of time (Richards et al. 1985).

Word stress in Persian is progressive and consequently the stress falls on the final syllable of a word. The only exception is for words that their final syllable is a clitic which means an unstressed word that normally occurs only in combination with another word. Phrase stress, however, is regressive; therefore, the stress is on the initial syllable in verbs. For example, the stress of the compound noun *baz-kon*, which means ‘opener’, is on the last syllable, while the stress in the verb phrase *baz kon*, which means ‘open’, is on the first syllable. The Persian speaking learner confronts considerable problems in assigning stress within English words or sentences because; the degree of predictability of word stress is very low in English especially if we compare it with Persian. A very good example in point is the stressed word in wh-questions in Persian: *ch'era mi-xandi?* (Why do you laugh?) which is *chera*.

However, in English the stressed word in the sentence *how are you?* is the *to be* verb. This is the reason most of the Persian learners of English can not locate the correct stressed word.

Furthermore, English stress placement varies according to grammatical categories, for example, ‘conduct’, ‘perfect’, ‘present’, ‘produce’, and so forth as verbs receiving stress on the second syllables and as nouns on the first, and on the other, he/she is used to assigning stress almost invariably on the first syllable of every word in his/her first language.

### *An Account of Iranian EFL Pronunciation Errors ...*

Unlike the Persian language, the English language has strong and weak forms, such as articles (*a, an, the*), pronouns (*he, she, we, you, him, her, them, us*), auxiliaries (*do, does, am, is, are, have, has, had, can, shall, will*), prepositions (*to, of, from, for, at*), and conjunctions (*and, but*), which are usually unstressed in connected speech. For example, *the* /ðe/ is pronounced /ðə/ before consonants and /ði/ before vowels in connected speech if it is not stressed for some specific reasons. As the Persian speaking learner is not accustomed to using such forms in his/her mother tongue, he/she certainly finds them problematic in both production and reception.

#### **5.4. Intonation Contours**

Intonation, the rises and falls in tone that make the 'tune' of an utterance, is an important aspect of the pronunciation of English, often making a difference to meaning or implication. Stress, for example, is most commonly indicated not by increased volume but by a slight rise in intonation.

Stress and intonation are two essential aspects of the pronunciation of English words and utterances since they perform phonological functions. Intonation, part of the supra-segmental phonology of English, is basically constituted of the rising tone : a movement from a lower pitch to a higher one, e.g. *yes* /<sup>ˈ</sup>jes/ uttered in a questioning manner, and the falling tone: one which descends from a higher to a lower pitch, e.g. *yes* /<sup>˘</sup>jes/ said in a definite, final manner, and plays varied unavoidable functions in the English language, such as attitudinal function, i.e. conveying emotions and attitudes, accentual function, i.e. the placement of the tonic syllable indicating the focus of the information, grammatical function, i.e. the link between the tone unit and units of grammar, and discourse function, i.e. attention focusing and the regulation on conversational behavior, which have little relevance to the Persian language.

It is clear that the Persian speaking learners of EFL face difficulty in mastering English intonation due to their mother tongue interference and inadequate training, and their speech then sounds unnatural and even unintelligible.

## **6. Conclusion**

The above analysis, interpretation and exemplification between the two languages have clearly revealed that the Persian speaking EFL learners encounter diverse phonetic and phonological problems resulting from two basic causes: (a) the differences between the mother tongue and the target language, and (b) mother tongue interference (MTI). If that is the case, then all the components of the teaching process have to take care of the factors that will help the learners overcome the phonetic and phonological problems and improve their oral and auditory ability.

## **7. Pedagogical Implications**

The findings of piece of research would implicate certain pedagogical implications. Firstly, the syllabus should necessarily contain the phonetic and phonological items that the learner needs to learn and/or finds problematic.

And they should be arranged in the order in which he/she will best learn and internalize them in order to use them accurately and fluently in his/her production and perception of speech in real life situations. Secondly, pronunciation teaching can be integrated as much as possible with the rest of the items constituting language teaching, such as grammar, vocabulary, conversations, style, function, and the like. Nevertheless, pronunciation problems should sometimes be taught separately for special attention and



### *An Account of Iranian EFL Pronunciation Errors ...*

practice resulting in accuracy and fluency. Last but not least, the implication of the present study is that our EFL teachers themselves should be aware of this fact committing mistakes/errors on the part of the EFL learners are a normal part of the learning process.

However, the teachers' task will become more crucial in making their students conscious of the areas in which they face problems in the correct pronunciation, stress, and intonation and give them ample authentic practice to overcome these difficulties in order to avoid their incorrect pronunciation being fossilized and become a habit. In this way, they will help EFL learners be active classroom participators and enjoy interacting with native speakers with no foreign accent leading to more intelligibility and fluency in their performance.

## **References**

- Ahmadvand, M. (n.d.). *Analysing Errors of Iranian EFL Learners in Their Written Productions*. Retrieved 12 14, 2008, from Knol Beta: A unit of knowledge:- <http://knol.google.com/k/moslem-ahmadvand/analysing-errors-of-iranian-efl/tbh5kkwy5hmk/2?locale=en>.
- Brown, H. D. (1994). *Principles of Language Learning and Teaching (3rd ed.)*, Englewood Cliffs, NJ: Prentice Hall.
- Corder, S. (1974). "Idiosyncratic Dialects and Error Analysis", in Richards, J. (Ed.). *Error analysis: Perspectives on Second Language Acquisition*, Essex: Longman, pp.158-171.
- Dulay, H., M. Burt, and S. D. Krashen (1982). *Language Two*, New York: Oxford University Press.
- Ellis, R. (1994). *The Study of Second Language Acquisition*, Oxford: Oxford University Press.

- Fries, C. C. (1945). *Teaching and Learning English as a Foreign Language*, Ann Arbor: University of Michigan Press.
- Gass, S. (1996). *SLA and Linguistic Theory: the Role of Language Transfer*, in Ritchie et al. pp. 317-345.
- James, c. (1981). *Contrastive Analysis*. UK: Longman.
- Jespersen, O. (1912). *How to Teach a Foreign Language*, London: George Allen.
- Kachru, B. B. (1992). "World Englishes: Approaches, issues and resources", *Language Teaching*, 25, pp.1-14.
- Kelly, L. G. (1969). *25 Centuries of Language Teaching*, Rowley, Mass.: Newbury House.
- Lado, R. (1957), *Linguistics across Cultures*, University of Michigan Press, Ann Arbor.
- Mirhassani, A. (2003). *Theories, Approaches, and Methods in Teaching English as a Foreign Language*, Tehran: Zabankadeh.
- Odlin, T. (1989). *Language Transfer*, Cambridge: Cambridge University Press.
- Ohata, K. (2004, October 20). *Phonological Differences between Japanese and English*. Retrieved, 14 Dec 2008, from RESOURCE CENTER FOR VIETNAMESE STUDENTS OF ENGLISH:  
<http://khoanh.hcmup.edu.vn/index.php?name=News&file=article&sid=608>
- Palmer, H. (1917). *The Scientific Study and Teaching of Languages*, New York: World Book Company.
- Pavlenko, A. and J. Scott (2002). "Bidirectional Transfer", *Applied Linguistic*, 23, 2, pp: 190-214.
- Roach, P. (2000). *English Phonetics and Phonology*, Cambridge: Cambridge University Press.
- Richards, J., J. Platt and H. Weber. (1985). *Longman Dictionary of Applied Linguistics*, England: Longman Group Limited.

*An Account of Iranian EFL Pronunciation Errors ...*

- Schachter, J. (1983). "A new account of language transfer", in S. Gass and L. Selinker (Eds.), *Language transfer in language learning*. Rowley, MA: Newbury House, pp. 98-111.
- Schachter, J. (1992). "A new account of language transfer", in S. Gass and L. Selinker (Eds.), *Language transfer in language learning*, Amsterdam: John Benjamins, pp. 32-46.
- Strain, J. E. (1968). "A Contrastive Sketch of the Persian and English Sound Systems", *IRAL* 6.
- Swan, M. and Smith, B. (Eds.). (1987). *Learner English: A Teacher's Guide to Interference and Other Problems*, Cambridge: Cambridge University Press.
- Taylor, G. (1986). "Errors and explanations", *Applied Linguistics* 7, pp: 144-166.
- Whitman, R., and Jackson, K. (1972). *The Unpredictability of Contrastive Analysis*, *Language Learning*, 22, pp. 29-41.

