Research Paper

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Phonological Contrast of Persian and English Consonantal Segments

Linguistics

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ABSTRACT

This study is an investigation of the phonological differences between English and Persian Consonantal systems. As a study in contrastive analysis of the phonologies of the two languages with a potential application in pedagogic needs, this study is aimed at analysing consonantal phonemes of English and Persian and their allophonic variations in order to indicate their differences and similarities. Finally, the author summarizes the phonological contrast of English and Persian with a view to spelling out the phonological differences of the two languages in question.

1. Introduction

Linguistically, in explanation of consonants and vowels, a phoneme is a mental image of sound that is part of an unconscious linguistic system and an abstract sound that is never pronounced or heard while phone is a concrete speech sound that can be considered as the realization of a phoneme by an individual speaker. Therefore, talking about the vowel and consonantal phonemes as abstract entities require the empirical details supplied by the discussion of their positional variants namely, their allophonic realizations. Allophone variations of an abstract phoneme indicate how it is realized as actual phonic substance in distinct environments.

It was Robert Lado (1957), who initially defined the Contrastive Analysis Hypothesis, in terms of '...the assumption that we can predict and describe the patterns that will cause difficulty in learning, and those that will not cause difficulty, by comparing systematically the language and culture to be learned with the native language and culture of the student' *((1957: vii)* cited in Brown (1980:149)). Lado believed that comparing the first and second languages side by side is a potential methodology to predict what errors a learner would encounter during the language acquisition process.

According to the contrastive analysis hypothesis, those elements of the target language that are similar to the native language of the learners are easy, while those elements that are different are difficult. It is largely accepted that this technique would prompt a reasonable understanding of why errors are made in language learning and how they should be managed.

2. A Review of the Literature on the Persian and English Consonantal Systems

2.1 Consonantal Phonemes of English

Cruttenden states that 'It is possible to abstract from a continuous utterance of English by means of a process of commutation 24 distinctive units which are consonantal both in terms of their position in syllables and also in the majority of cases, in terms of their phonetic nature (i.e. they have, at least in some of their realizations, articulations involving the obstructions or narrowings which produce acoustically, a noise component).' These 24 consonantal phonemes are classified into two general categories in Table 1.1 as OBSTRUENTS (the articulation in which there is a total closure or a stricture to cause friction and strong gradient of air pressure in the vocal tract) and SONORANTS (the articulation in which there is only a partial closure or an unimpeded oral or nasal escape of air). (Cruttenden 1994: 149)

Manner of articulation \ Place of articulation		Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Palatal-alveolar	Palatal	Velar	Uvular	Glottal
		vl vd	vl vd	vl vd	vl vd	vl vd	vl vd	vl vd	vl vd	vl vd	vl
Obstruents	Plosive	p b			t d				k g		
	Affricate						ʧ ʤ				
	Fricative		f v	θ ð	s z		ʃ ʒ				h
Sonorant	Nasal	m			n				ŋ		
	Approximant	(w)			l	r		j	*w*		

Table 1.1: English consonantal phonemes

In Table 1.1, the parameter of phonation, the voiced against voiceless, allows for two broad categories of phonemes to be distinguished. The phonemes are categorised into two main classes as obstruents and sonorants. The obstruents are further distinguished according to the different degrees of closure. The plosive and fricatives involve total closure, the latter being additionally characterized by friction resulting from relatively slow separations to the organs. The fricative show local audible frictions induced by the close approximation of the two organs.

Nasals and approximants are two subclasses of the sonorants. The nasals are articulated while a complete closure happens in the moth as well as simultaneous and escape of air through the nasal cavity. The approximants are characterized by narrowing without any friction being involved. Bilabial, labio-dental, dental, alveolar, post alveolar, palato-alveolar, palatal, velar and glottal are nine classes of phonemes to be distinguished via the parameter of location.

2.2 The Persian Consonantal Phonemes

There are 23 consonantal phonemes in Persian Language.These phonemes can be classified into two main categories as OBSTRUENTS and SONORANTS. Table 1.2 below indicates the phonemic inventory of Persian consonants that includes

both voiced and voiceless versions of plosives, affricates and fricatives. As far as the place of articulation is concerned, the plosives are subcategorised to bilabial, dental, velar and uvular; the affricates are palate-alveolar; and fricatives are labio-dental, alveolar, palate-alveolar and uvular. The Persian consonantal system includes two bilabial and dental nasals, one dental trill, one palatal approximate, one dental lateral approximate, one voiceless glottal fricative and one voiceless glottal plosive.

Manner of articulation \ Place of articulation			Bilabial		Labio-dental		Dental		Alveolar		Palatal-alveolar		Palatal		Velar		Uvular		Glottal
			vl	vd	vl	vd	vl	vd	vl	vd	vl	vd	vl	vd	vl	vd	vl	vd	vl
Obstruent	Plosive		p	b			t	d							k	g	**[q]**	**G**	ʔ
	Affricate										ʧ	ʤ							
	Fricative				f	v			s	z	ʃ	ʒ					**x**	**[ɣ]**	h
Sonorant	Nasal			m						n									
	Approximant	Trill								r									
		Liquid		[w]						l				j					

Table 1.2 Consonantal phonemes of Persian

3. English and Persian Consonants in Contrast

For convenience of comparison, the consonantal phonemes of English and Persian are indicated respectively, in Table 1.1 and 1.2 above. The phonemes (**q, G, x,** ɣ) shown in **bold** in the Persian table indicate the absence of certain sounds found in English. The phonemes shown in ***italic*** (*θ, ð ŋ,* ***w***) in the English table indicate the absence of those phonemes in Persian. This comparison between the languages at the level of phonemes reveals noticeable differences such as number of phonemes, lack of equivalents, near-equivalents, etc:

3.1 Number of Phonemes

As was indicated in Tables 1.1 and 1.2 above, there are 24 and 23 phonemes in English and Persian respectively. It should be noted that the four English consonants /θ/, /ð/, /ŋ/ and /w/ are absent in the Persian consonantal system and the three Persian consonants /G/, /ʔ/and /x/ are absent in the English system.

3.2 Place and Manner of Articulation

There are some common phonemes in the consonantal system of the two languages in question. However, these involve different places of articulation and manners of articulation. Thus, the unique phonemes /t/, /d/ and /r/ are produced by different articulators in each language. For example, the pair /t/ and /d/ which are voiceless and voiced alveolar plosives in English are voiceless and voiced dental plosives in Persian respectively. Similarly /r/, which is a post-alveolar approximant in English, is an alveolar trill in Persian.

4. Conclusion

Beginning with the plosives, the pair /**p**/ and /**b**/ are voiceless and voiced in both Persian and English. However, /p/ in Persian is partially or fully aspirated in the initial, medial and final position compared to the /p/ in English which is aspirated only in accented syllables. The stops /**t**/ and /**d**/ are voiceless and voiced plosives in both languages respectively, but with regard to the position of the tongue, they both have dental articulation in Persian, while /d/ can also have a dental realisation [t̪] in English. Moreover, /t/ in Persian is partially or fully aspirated in almost all positions but in English it is aspirated only in accented syllables. The velars /**k**/ and/ **g**/ are voiceless and voiced plosives in both Persian and English. Moreover, /k/ in Persian is partially or fully aspirated in almost all positions but in English /k/ is aspirated only in accented syllables.

As far as the nasals are concerned, /**n**/ and /**m**/ are categorized as plain voiced nasals in both languages. The velar nasal phoneme /ŋ/ is absent in Persian, but it occurs as an allophone of /n/ before phonemes /k/ and /g/ as in the word /bɑŋ/ meaning **"**shout**".** It should be noted that Persian English speakers usually substitute two separate phonemes /n/ and /g/ or /n/ and /k/ instead of /ŋ/. This may cause a gap in communication, as in the case of the pronunciation of the word 'sing' may be pronounced as [sing] or [sink] instead of /siŋ/.

Of the fricatives, the pair /**f**/ and /**v**/ are voiceless and voiced in both Persian and English; however, in Persian, a larger part of the lower lip touches the upper teeth in articulation of the allophones of these phonemes than is the case with the English counterparts. The voiceless and voiced fricatives /**s**/ and /**z**/ appear in both languages: Behaving differently from their counterpart in Persian, in English /s/ phoneme has allophone variations as [s̪] (retracted) and [ʃ] (post alveolar). In Persian the only different allophonic variant of the /z/ phoneme as opposed to its English counterpart is [z˺] (no audible release). The fricatives /ʒ/ and /ʃ/ are voiceless and voiced post-alveolar in both languages and they are produced in the same way. The phoneme /**h**/ also exists in both languages as a voiceless glottal fricative with almost the same articulation. The fricatives /**x**/ and [ɣ] are absent in English and the two fricatives /θ/ and /**ð**/ do not exist in Persian. It should be noted that Persian speakers of English have difficulties in articulating these voiceless/voiced pair of fricatives (/θ/ and /ð/); therefore, they may substitute /θ/ with its nearest phonemes /t/ or /s/ and /ð/ with its nearest phonemes /d/ or /z/. There are also two affricates /**t**ʃ/ and /**d**ʒ/ which are voiceless and voiced and have palatal-alveolar articulation in both languages.

Moving on to the approximants, the palatal /**j**/ is realized the same way in both languages. In the case of the phoneme /**r**/, there are three different allophonic variants for this phoneme in Persian. The most common is [**r̥**] a devoiced variant which occurs word finally after back vowels, e.g. /kær̥/ meaning "deaf", and word-medially before voiceless consonants, e.g. /sor̥fe/ meaning "sneeze". The second allophone is [ɾ], a flap variant that occurs inter-vocally, e.g. [bɑɾɑn] meaning "rain", and the third one is [**r**], a trill allophone which occurs initially and medially, e.g. /ruz/ meaning "day" and /mærdom/ meaning "people". On the other hand, English has different allophones for the phoneme /r/.

Another problem that comes from the lack of particular consonants in Persian which exist in English is the pronunciation of approximant-velar /**w**/.Thus, Persian speakers of English usually replace the English semivowel /w/ with /v/, for instance; 'west' and 'vest' may be pronounced as /vest/ in both cases. Finally, /**l**/ which appears in both languages is mainly considered as a clear [l] in both languages but it has more allophones in English than in Persian.

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