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Phonological Differences of Persian Loan Words in Arabic

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ABSTRACT

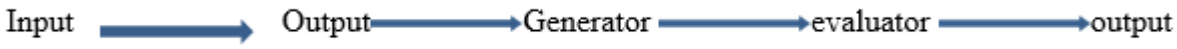
The purpose of the research is to study the phonological mutations of Persian loanwords in Arabic , on the focus of the Phonological processes . Speakers of any language use the loan word , and They change in their native morphological and phonological system. Authors gathered 300 Persian loan words which are originated from Persian language then he extracts phonetic forms and phonological differences of these words from two languages. The framework of the study is OT (Optimality Theory). The current study attempts to diagnose linguistically systematic phonological changes and provide a typology for classifying them. The findings of the study are that interdentally, pharyngeal, and bilabial glide places of articulation are inactive articulators in Persian and Persian language speakers replace loan words containing these consonants with the closest consonants in terms of place of articulation. The aim of this study is to investigate phonological and phonetic changes in both languages. In this research, first lexical Which has been specified from Persian and Arabic languages, then Study of phonological changes such as phonological stress , change, insertion, deletion, Softening, and metathesis are discussed .In this research, descriptive and analytical methods used to collect data.

1. Introduction

There is no doubt that loaning word (i.e., Arabicized) is a very common phenomenon and no language is entirely free of borrowed words (Jesperson, 1922). There are about 7000 languages spoken all over the world. It has been discovered that when languages come into contact, there is transfer of linguistic items from one language to another due to the borrowing of words (Kachru, 1989). The Term "Loan Words" It is considered quite normal for languages to borrow words from other languages. When a language takes words from other languages, these ―new arrivals are usually called borrowings or loan words. Fromkin (2003) believes that borrowing words is important especially when the giving language adds new words or morphemes to the other language. Arabic is considered one of the languages that have borrowed heavily from other languages particularly Persian language. To explain this phenomenon, Sapir (1921) asserts that the psychological attitude of the borrowing language itself towards linguistic material has much to do with its receptivity to foreign words.

2. Theoretical Framework

Optimality theory was presented in 1993 in the handwriting of the Prince and Smolensky as "Optimality Theory "Constraint Interaction in Generative Grammar". This work was published in 2004. Approach of this theory is the basis in all areas of constraint language and it had the most effect on generative phonology (Rasekh Mahand, 2004). Optimality theory deals with a collection of constraints instead of rules. Output in this theory results from interaction between a set of universal constraints which can be violated. Constraints interact with each other and in order to respect one constraint, the other one should be violated and there is no linguistic form that all constraints can satisfy with (Dabir Moghadam, 2004). Universal grammar in optimality theory contains a section entitled Constrains which includes all constraints of the languages. Constraints are universal and the only systematic differences in languages are in ranking of the constraints. Underlying representations and their surface realization in generative theory are used as input and output in optimality theory. Because of lack of assuming intermediary levels, adaptation of input and output is immediate and direct (Kager, 1999). McCarthy (2008) shows general pattern of optimality theory as follows. These parts in addition to a set of universal constraints (CON) make up grammatical formation of optimality theory.



Pattern 1: General Pattern of Optimality Theory

Generator is a formal mathematical and universal mechanism, function of which is connecting input and output. It generates some competing output candidates from the input. The number of candidates can be infinite theoretically (McCarthy, 2002). Evaluator is also a formal mathematical mechanism which connects input and output in such a way that after generation of competing candidates, they are delegated to the evaluator so that it specifies the optimal candidate after imposing constrains (McCarthy, 2008; Kager, 1999). There are two sets of constraints in optimality theory; Faithfulness constraints and Markedness constraints. Markedness constraints evaluate the structural well-formedness of the output and have no access to output and it is blind to output. These constraints punish any mal-formedness. Faithfulness constraints monitor match between input and output and have access to levels, input and output.

These constraints punish any difference between input and output candidates (McCarthy, 2004; Kager, 1999). It should be noted all languages are common in universal constraints. The only difference in languages is in the way of ranking the constraints which cause higher rank for a specific constraint in one language and thus it is active, while it may have much lower rank in the other language and thus it is potentially active and has no important effect on determining output forms (Kager, 1999).

3. Persian And Arabic Phonology Systems

3.1. Arabic Language Phonology System

Arabic language has 28 consonants and three pairs of vowels. Some consonants in Arabic language have Secondary Articulation as distinctive feature. In Secondary Articulation, one frictionless feature is added to one of articulations of consonants. That is, another feature is added to the primary articulation (Catford, 1992; Ledfoge, 1982). Velarization or Pharyngealization is secondary articulation in Arabic language. Velarization is a term applied on the consonants articulated with the back of the tongue touching or near the soft palate. In fact, it is touching soft palate in consonant which its articulation place is not soft palate (HaghShenas, 1997). Consonants of/t , s . z,ɬ/ (equivalent to ط , ص , ض , ظ) . Arabic consonants and vowels can be observed in Table 1, 2 , 3 (based on IPA). Vowel system contains three vowel pairs including two high vowels and one low vowel. The assumption that Arabic language includes three vowels means the real and distinctive number of vowels in this language is three vowels [u, i, a]. In fact, these vowels are the most frequent vowels in Arabic language (Khodabakhshi, 2007).

Table 1: The phonemic inventory of Arabic consonants

Stops	b , t d , k q ,ʔ
Affricative	ʤ
Fricative	f θ , ð , s z , ʃ χ ʁ , ħ , ʕ ,h
Nasal	M , n
Liquids	l
Trills	R
Approximants	W , j

Table 2: The phonemic inventory of Arabic simple vowels

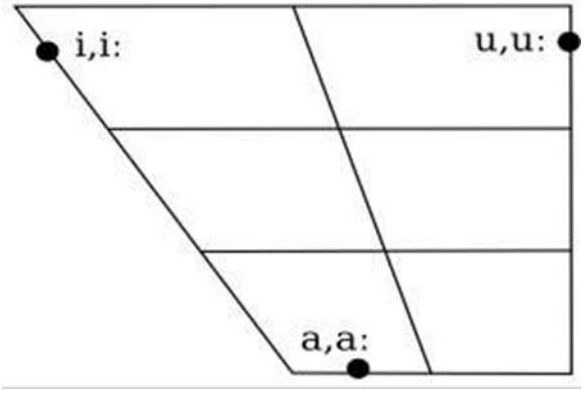
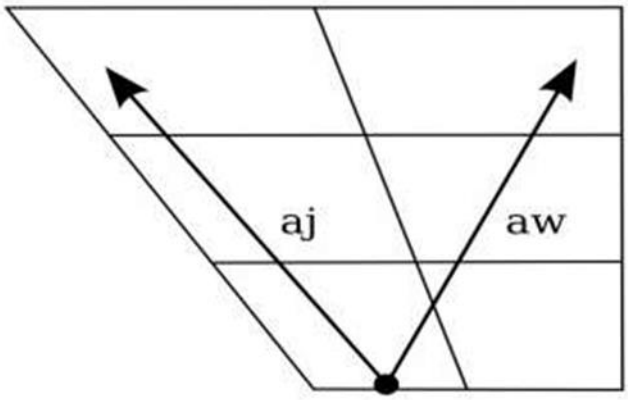


Table 3: The phonemic inventory of Arabic diphthong vowels(Thelwall,1990)



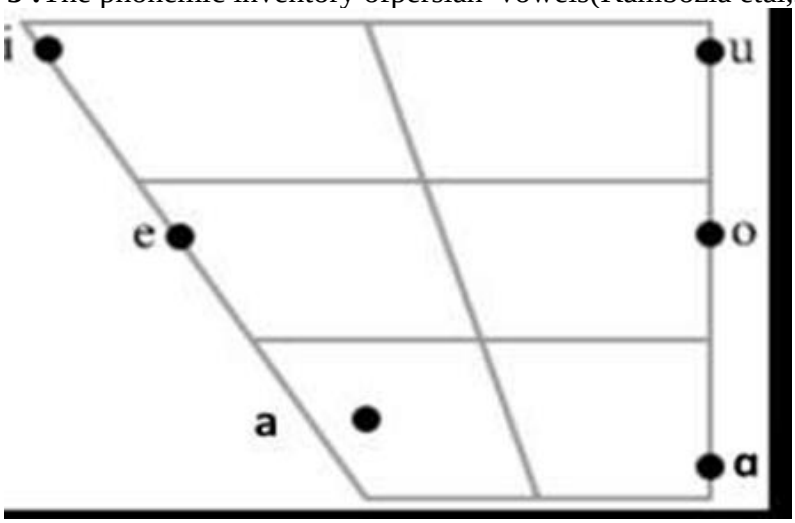
3.2. Persian Language Phonology System

Persian language includes 23 consonants and 6 vowels. Syllable is made as phonological underlying (C)V(C)(C) form or as (and in phonetic) phonological in articulatory as CV (C)(C) form in this language (Kamboziya and Hadiyan, 2009).

Table 4: The phonemic inventory of Persian consonants

Stops	b t d k q ʔ c, ɟ
Affricative	ʤ ʧ
Fricative	f v , θ ð s z ʃ ʒ , χ ,h
Nasal	M , n
Liquids	l
Trills	R
Approximants	*ɹ , j

Table 5 : The phonemic inventory ofpersian vowels(Kambozia etal,2011)



4-. Data Analysis

Phonological changes and processes of Persian loan words originated in Arabic language are investigated in this section.

4-1 Sounds not constituting part of the Persian phonological system

4-1-1.Replacing Arabic Interdental Consonants /θ/and /ð/ with alveolar Persian Consonants / s / and / z /

θ → s and ð → z

Persian language lacks Interdental consonants. In other words, this part of speech organ is inactive in this and there is no such place of articulation. Thus, in confrontation with loan words with this class of consonants, the closest consonants in terms of the manner and place of articulation (S, Z) are replaced.

Table 6: shows effect of above constraints in selection of optimal candidate:

Arabic phonetic symbol	Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
/d3elða: ʔ/	naughty	/d3elza: ʔ/	/d3elða: ʔ/
/ ʔðerku:n/	please let me know	/ ʔzerku:n/	/ ʔðerku:n/
/a: ðar/	Effects	/a:sar/	/a: ðar/
/ ʔðerju:n/	calendula	/ ʔzerju:n/	/ ʔðerju:n/

4-1-2 Replacement of Arabic Pharyngeal Fricative Consonant / ʕ /with Persian Glottal Plosive Consonant /ʔ/

ʕ → ʔ

Consonant / ʕ /in Arabic language is produced by drawing back the root of tongue toward pharynx and it is produced as fricative sound (Khodabakhshi, 2007). There are many Arabic loan words in Persian languages which contain / ʕ /consonant, some of which are given in

Table7 shows effect of above constraints:

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
علم	/ **ʔ** lm/	/ ʕ lm/
شمعکار	/sham **ʔ** ka:r/	/sham ʕ ka:r/
بعوضه	/ba **ʔ** uza/	/ba ʕ uza/

4-1-3 Replacement of Arabic Fricative Pharyngeal Consonant /ħ/with Persian Fricative Glottal Consonant /h/

ħ → h

Consonant /ħ/ is a fricative pharyngeal consonant in which the tongue root is drawn back in its articulation (Khodabakhshi, 2007). Place of articulation of this consonant is void in table of Persian consonants. It means that its place of articulation is not active in this language, thus, Persian language utilizes a mechanism for adaptation of Arabic loan words in Persian.

Table 8 shows loan words with this consonant.

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
حربش	/harbash/	/ħarbash/
حندقوق	/handaquq/	/ħandaquq/
آحَد	/ʔhad/	/ʔħad/

4-1-4 Replacement of Arabic Voiced Velar Fricative Consonant غ/ʁ/ with Persian Voiced Plosive Velar Consonant /G/ ʁ→ G

The other consonant which was studied is consonant /ʁ/which is a voiced velar fricative consonant. Its place of articulation is velum and since velum is the boundary between the oral cavity and pharyngeal (Catford, 1992), the sounds that their place of articulation is velum may belong to the oral cavity or pharyngeal cavity depending involvement of the tongue body or root. Consonant /ʁ/is articulated by root of tongue in Arabic language, while tongue root in velum is not an active place of articulation in Persian and Persian phonological system should adapt them in confrontation with Arabic words containing this consonant.

Table 9 shows a set of Arabic words.

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
غراره	/qirara/	غراره / ʁ urara /
غرا	/qura/	غره / ʁ ura /
غرم	qaram//	غرامʁ uram/ /

4-1-5 Replacement of Arabic Bilabial Glide /w/ with Persian Labiodental Consonant /v/ w →v

Glide /w/ is a sound which is articulated with rounded lips and at the same time the tongue body is raised toward velum (Catford, 1992; Khodabakhshi, 2007). There are only three consonants with bilabial place of articulation in Persian language: /m/, /b/, and /p/, and articulation of glide consonant /w/ is not allowed in phonetic system of Persian language. In confrontation with loan words containing this consonant, Persian language imposes some constraints for their adaptation.

Table 10 shows loan words with consonant /w/

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
قربوس	/qarbavas/	/qarbawas/
پروانه	parvana / /	/barwana /

4-2 Deletion (elision)

Elision (sound omission) can be looked upon as the process of omitting sounds or segments in connected speech. Both consonants and vowels are possibly affected, and sometimes even the whole sound sequences may be elided (i.e., post-lexical representation , as stated by Katamba(1989:277). Elision can be of two categories: historical elisions where a sound, which existed in an earlier form of a word, was omitted in a later form and contextual elisions in which a sound, existed in a word and said by itself, is dropped in a compound and in a connected phrase (see Skandera & Burleig ,H.P:2011:94).

Table 11 shows loan words with Elision :

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
برشوم	/barshu:m	برشمBarshm
پرکنه	/ purkana/	برکه/burka/
پرزال	purzal//	برزل/burzl /
بزمگاه	Bazmaqah //	بزمخBazmakh/ /

Sibawayh remarks that, in Arabic, when two (تت t/'t), i.e. come in succession, one of them may optionally be deleted (Sibawayh 1317 A.H.:425-6).

تتكلمون« t^t^k^ll^mun/ - تكلمون > /t^k^ll^mun/

تتذكرون /t^t^d^kk^run/ تذكرون /t^d^kk^run/

Further, in his discussion of Arabicized loanwords. Sibawayh (1317 A. H. :342) employs the word حذف/hAdf/ 'deletion' to describe one of the changes applied to borrowed lexical items. Al-Jawaliqi (Bakalla 1984:41), on the other hand, uses the expression نقصان /nuqsan /h^rf/, i.e., 'the omission of a letter' to describe more or less the same process of deleting one or more segments from the original source form. Such changes, according to al-Karmali (1938:82), are attributed to the Arabs' keenness to maintain unstrained and easy pronunciation of loanwords by omitting some of their sounds/letters.

The deletion can be involved Initial, medial, or final segments or syllables, and may even include the clipping of a part of a word or one member of a compound. In addition, some cases of deletion are language-specific and in effect are more regular than others.

4-3 Insertion (Epenthesis)

Epenthetic consonant is that one used over the speech chain to prevent hiatus, usually the first vowel places at the end of previous morpheme and the second one occurs at the beginning of the next morpheme. Generally, Insertion process is a concept that adds a new element to a chain based on which a phonological element is inserted inside a word called EP. In such a process, it inserts a consonant intervocalically to resolve hiatus, or in order to break a consonant cluster, it may insert a vowel between two consonant. According to Firth `s point of view, an important figure in the foundation of linguistics as an autonomous discipline in Britain, these elements emerged at the border of between two syllables or two morphemes or even between two words belong to the larger units of phoneme, thus they place in the category of prosodies (FIRTH,J.R J 1984:135) This process occurs in different languages that the Arabic language is one of them.

Epenthesis means the addition of one or more sounds to a word, especially to the interior of a word (at the beginning prothesis and at the end paragoge are commonly used. Epenthesis may be divided into two types: excrescence for the addition of a consonant, and for the addition of a vowel.(Wikipedia).

In order to break consonant clusters, Arabs interpose a vowel, whether initially or medially (usually after the first consonant), or by prefixing an additional syllable composed of the glottal stop * (hamza) and a short vowel, thereby creating a new syllable of the type CVC, which is permissible in Arabic. Thus.

Table 16 shows Insertion process

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
بهت	/Bht/	/Ba:hit / باهت
حسگل	/hsgl /	/hisqil /حسقيل

Initial consonant clusters also undergo epenthesis, either by prefixing همزه or inserting a vowel, as in the following examples:

Table 17 shows inserting Hamza .

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
استاد	/Istad/	/ ʔstad/
آبریز	/ ʌbriz/	/ʔbri:q/

To show inflection, همزة or a ج is sometimes added finally to loanwords ending in a vowel or a /h/:

Table 18 show this process

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
حر حربا	/hirba/	حرباء /hirbaʔ/
کاه با	/kah ruba/	کهرباء kʌhrubaʔ//
بهرامه	/bahrama	بهرامج /bahramid3/

4-5 Lenition

Lenition is most commonly defined as a ‘relaxation’ or ‘weakening’ of articulatory effort” (Hock 1991: 80). The term was coined by Rudolf Thurneysen as one “used to describe a mutation of consonants which normally originated in a reduction of the energy employed in their articulation” (Thurneysen 1946: 74) and affects mostly consonants in intervocalic position (Thurneysen 1946).

The process of lenition is related to the different degrees or types of stricture in the speech organs .The major stricture types of consonants are three: stop , fricative , and approximants (Catford , 1988 :64). Lenition involves the change from a stop to a fricative ,a fricative to an approximant , a voiceless to a voice sound or sound being reduced to zero .

Table 19 shows this process

ن	Persian phonetic symbol	Arabic phonetic symbol
کریبان	/Kriban /	Voiceless to voice جریبان/d3iriban/
پروانک	/parva:nek /	stop to fricative فروانک /farwa:nq/
پروانه	/ Parvana /	fricative to approximant بروانه /barwana/

4-6 Metathesis

Metathesis refers to a phonological process in which the ordering of proximate segments, which are usually adjacent, is reversed. This phonological process is considered an attempt to preserve more acceptable phonotactics. (Hooper, 1972). In other words, Metathesis (I put in a different order) is the transposition of sounds or syllables in a word or of words in a sentence. Most commonly, it refers to the interchange of two or more contiguous segments or syllables, known as adjacent metathesis or local metathesis:

- foliage > **foilage (adjacent segments)
- anemone > **anenome (adjacent syllables)
- cavalry > **calvary (codas of adjacent syllables) Strazny, Philipp (2005:679).

So Arabicization may also involve metathesis, i.e., transposing phonemes or segments from one place to another:

Table 20 shows process of metathesis

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
بهرمان	/Bahrman /	بهرامن/ Bahraman /
بزر	/ Bazer/	برز /Barz /
برزیار	/ Barzya:r/	بیزار /Bi:zar/
دارافزین	/dar ?^fzin/	درابزین /d^rabzin
زنجیر	/zanjir /	جنزیر /janzir /

4-7 Dissimilation

When two adjacent sounds are similar, one is altered by changing its feature value in order to preserve the contrast between otherwise homorganic or semihomorganic segments. Sometimes, this takes the form of addition 'epenthesis' or deletion, e.g.,

Table 21 explains this process .

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
ددبان	/ d^d^ban/	/dayd^ban/ دیدبان (Deletion of ي)
پادزهر	\padzhar/	Deletion of د) /bazahar/ بازهر .(

4-8 Stress shift

Arabic tends to place the primary stress on the next-to-the-last syllable. This often results in accentuating or prolonging the stressed sound, as summed up by Ibn Jinni in al-Khasa'is (Ibn Jinni 1952:315):

When short vowels are accentuated, they are changed to their corresponding long vowels. Thus, a فتحة /A/is turned into an الف /a/, كسرة Into ي/i:/ , and ضمة /u/into a /u:/

Table 22 supplies examples .

Arabicized	Persian phonetic symbol	Arabic phonetic symbol

words		
لوبيه	/lubya/	لوبياء /lubya:ʕ/
نومذه	/numɬa/	نموذج /namu:thadʒ /

4-9 Gemination

Gemination refers to ‘‘the doubling of the same consonant within a word pattern’’ (Al-Ani & Shammas, 1980: 47). the stress shifts to the syllable before the last accounts for the doubling of the ك/k/ and the ر /r/as in :

Table 23 gives examples.

Arabicized words	Persian phonetic symbol	Arabic phonetic symbol
دكان	/dukan/	دكان /dukkan/
تراج	/ʒturad/	دراج /durrad3
كربان	/karban /	جربان /dʒarbban/

5-Conclusion

We can conclude that interdental, pharyngeal, and bilabial glide places of articulation are passive articulators in Persian and Persian language speakers mutate loan words containing these consonants with the closest sounds in terms of place of articulation. In addition, glottal plosive consonant /ʔ/ is eliminated from the end of words having it.as well as it can be concluded a lot of changes in the phonetic and phonological processes occur during loan words in both languages. phonological stress , change, insertion, deletion, Softening, and metathesis are discussed in this study .

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