The Emergence of Parallel grammars: An analysis of Arabic loanwords in Saraiki

Nasir Abbas Syed[1]
Sehrish Shafi[2]
Sami Mohammed Alanazi[3]

Abstract

This study presents data from Arabic loan word adaptation in Saraiki. The data are analyzed using Optimality Theory. The data show that speakers of a borrowing language sometimes change words of a source language obeying constraints which are neither operative in borrowing language, nor in a source language.Two types of repair strategy are discussed in the loanwords presented in this paper, namely gemination and stress shift. Vowel harmony also emerges in the context as a free ride natural effect. Based onthe evidence from Saraiki loanwords of Arabic origin, it is argued that in some contexts, speakers of a borrowing language develop a third phonology which is different from L1 (borrowing language) and L2 (source language) grammar.

Keywords: Arabic, Gemination, Loanword phonology, Markedness, Saraiki, Stress Shift, Universal Grammar, Vowel Harmony

1. Introduction

Saraiki is an Indo-Aryan language (Bashir & Conners, 2019)of Sanskritic family (O'Brien, 1881). It is spoken in the areas which make central Pakistan (Shackle, 1976). Since, this language is spoken in the areas comprising of the heart of the Indus Civilization, therefore, it has got strong influence from Arabic language because the Arabs first came to the Subcontinent in the Indus Valley where Saraiki and Sindhi were being spoken. With their arrival, Islam spread in this area. Resultantly, Saraiki, along with Sindhi, is the language that received maximum number of Arabic loanwords. Saraiki adapts Arabic words according to its own grammatical requirements. For example, Arabic consonants /ʕ/ and /ʔ/ thoroughly delete in Saraiki because these sounds do not exist in Saraiki consonant inventory. Pharyngealized obstruents/sˁ/ and /t̪ˁ/ of Arabic only lose their secondary articulation in loanword adaptation in Saraiki.

[1] Professor, LUAWMS
[2] Lecturer, Mirpur University of Science and Technology, Mirpur
[3] Assistant Professor, Northern Boarder University, Arar, Saudi Arabia

Similarly, word-final /ħ h/ of Arabic delete and those on word-initial and word-medial position merge into Saraiki/ɦ/. In the same way, /θ/ and /w/of Arabic substitute with Saraiki /s/ and labio-dental approximant /ʋ/, respectively. Similarly, /ð/, /ðˁ/, /d̪ˁ / and /z/ of Arabicare substituted with a single fricative [z] in Saraiki (Syed & Aldaihani, 2014).

The current study presents further examples of Arabic words that are adapted in Saraiki under constraints which are neither operative in Saraiki (L1) nor in Arabic (L2). Based on this evidence, it is argued that speakers of a borrowing language sometimes generate a third loanword specific grammar which is different from that of the borrowing language (L1) and the source language (L2). The paper also presents a case study of adaptation of Arabic loanwords in Saraiki.

The remainder of this paper is organized as this. The following section recapitulates some well-known approaches to loanword adaptation in the literature. The data are presented in section 2 and analyzed in section 3. Section 4 presents an analysis of the data, and the paper concludes with section 5.

2. Literature Review

Silverman (1992) provided the first detailed model of loanword adaptation, which explicitly talks about loanword adaptation process. According to Calabrese and Wetzels (2009), there are two major contexts to loanword adaptation, namely, when receivers are well-familiar with the grammar of the donor language, and/or when they are not or are a little familiar with the grammar of the donor language. Yip (2006) is of the view that the source of loans is normally available variety of the donor language and/or inter-language phonology. Three major approaches have emerged in the literature on loanword adaptation. We briefly discuss those in the following section.

2.1 Approaches to Loanword Adaptation

In the words of Kenstowicz (2010), three models of loanword adaptation have been common in the literature. The first is phonology-based model of LaCharité and Paradis (2005) which assumes that initially, bilinguals who have full understanding of the grammar of a donor language bring words of the L2 into the L1. Later, these words are transmitted to the other speakers. The first donors adapt loanwords because of the equivalence between structures of the source and the borrowing language. In the words

of Kang (2010, p. 226) "Some have argued that the input is the phonological representation in the source language, devoid of redundant phonetic details (Paradis & LaCharite´ 1997). Others, on the other hand, have assumed that the input to adaptation is the acoustic representation in the source language, including all phonetic details of the source language sounds, regardless of their phonological status in the input language (Silverman 1992, Peperkamp, Vendelin and Nakamura, 2008, Boersma & Hamann 2009…)".

LaCharite and Paradis (1997) name their model 'Theory of Constraints and Repair Strategies' (TCRS). The Preservation and Minimality principle of TCRS demands maximum acceptance and minimum change in loanwords. Languages prefer adaptation in the form of insertion or substitution to deletion in loanword grammar (Paradis and LaCharite, 1997). According to LaCharite and Paradis, L1 phonology consists of universal and local (non-universal) constraints which, when violated (in case of new structures in loanword adaptation), trigger repair strategies. The repair strategy aims to conform the alien words/structures to the L1 grammar. While applying such repair strategies, maximal information in the source input is preserved. This is called the Preservation Principle. It preserves maximal information in the input following the Threshold Principle. This threshold is common in all languages which tolerates maximum two repairs in a domain; however, this is maximum allowed but practically languages obey Minimality Principle and use as few repair strategies and at as lower level as possible.

The second is a phonetic perception-based approach of Peperkamp and Dupoux (2003) which was elaborated in Peperkamp, Vendelin, and Nakamura (2008). According to this approach, loanwords are first adopted based on phonetic perception without having access to the phonology of sourced language. Peperkamp and Dupoux (2003) claim that some researchers' viewpoint, that loanwords are taken from surface phonetic forms of the source language through perception of the listeners but adapted to the host language according to the underlying grammar of the phonology of L1, is not accurate. They rather argue that it is the surface phonetic forms of both host and donor languages which govern the adaptation of loaning. This approach considers phonetic similarity between corresponding structures in the L2 and L1 in loanword adaptation.

Kenstowicz (2003), Yip (2006) and Boersma and Hamann (2009)also claim that phonetic prominence or saliency is an important factor in loanword adaptation. Initially, these features play vital role, but later other features are added to highlight lexical contrasts. In the words of Kenstowicz (2010), these enhancing features have strong significance in loanword grammar. This leads us to the third approach also called hybrid approach, which mixes the role of both phonetics and phonology in loanword adaptation. The third view is that of Yip (1993, 2006) and others(Kenstowicz, 2003; Silverman, 1992; etc.) who demonstrate that listeners perceive non-native linguistic input and adapt it according to the principles of their native L1 grammar. Yip suggests the following mechanism for loanword adaptation.

(1)

L2 source → Perceptual Module → Non-native percept → L1 grammar → Adapted loanwords

Insertion, deletion and substitution are the most common repair strategies in loanword adaptation. Researchers, regardless of their affiliation with one or other school of thought, have discussed these strategies in detail.

2.2 Insertion, Deletion and Substitution in Loanword Adaptation

Yip (2000) is of the opinion that acoustic perception salience is one of the major factors to determine the target of deletion in loanword adaptation. Seo (2016) is of the view that in L1 grammar, deletion strategy is adopted more frequently but in L2 loan adaptation, insertion strategy is preferred. Vowel insertion provides additional acoustic perceptual salience to the adjacent consonants and therefore, are preferred while for deletion only those perceptually (acoustically) weak consonants are selected which, if deleted, do not decrease salience of consonants, and therefore, do not matter much on perception level. However, it is also claimed that perceptual salience is language specific(Jacobs & Gussenhoven, 2000). For example, although /s/ is not deleted in loanword clusters in many languages due to its strong acoustic signals and perceptual salience, it *is* deleted in Hawaiian owing to its absence in the L1 phonemic inventory. Its introduction in such context requires violation of many more constraints which, in the opinion of Seo (2016), is against the Minimum Threshold Principle of Paradis & LaCharite (1997). Saraiki language does the same as it deletes some of the Arabic consonants which do not exist in its phonemic inventory, like pharyngeal and laryngeal fricatives and

glottal stops but substitutes those which have closer correspondents as listed above. In the words of Seo (2016), insertion option is not so preferred on coda position. However, in our data we have seen insertion occurring in coda clusters. Regarding this, Broselow (2015)observes that listeners perceive a vowel in obstruent liquid clusters. That is why they insert the same vowel in their production also. Broselow finds a default vowel in word-initial position and a copy vowel in clusters in her data.

Paradis & LaCharité (1997), explaining Preservation Principle, claim that languages prefer insertion to deletion as a repair strategy in loanword adaptation because in this way they can preserve maximum input. Yip (1993) uses the term 'mimic' for this trend in loanword phonology and Tsuchida (1995) reflects that same with an OT constraint LOANWORD CORRESPONDENCE which demands that output of a loan item must contain all items of the input which simply means 'no deletion'. Following these constraints, normally, deletion is prohibited in loanword adaptations and the languages repair unwanted structures by insertion.

Saraiki changes the structure of Arabic loanwords. These changes are triggered by prosodic requirements of the indigenous Saraiki grammar. Cross-linguistically, insertion is a very common repair strategy in loanword phonology (Soohani & Samaei, 2018). It is normally triggered by prosodic requirements (Pariente, 2017). Saraiki has taken many words of classical Arabic as loans. Various repair strategies are used to adapt these loanwords in Saraiki. In the following section, we provide two types of data. In the first type, we notice that clusters of stop and rhotics are broken by insertion of a vowel that is harmonious to the one in the stem. In the second type of data, syllables of light-heavy (LH) syllables change into HH type for moving stress from right edge of words to the left. Gemination occurs in both types as a repair strategy.

3. Method and Material: Arabic Loanword in Saraiki

In this study, the data were collected from monolingual native speakers of Saraiki. The examples presented here were collected from daily informal conversation. Each word presented here was confirmed multiple times in the speech of native speakers before including in the paper. The first author of this paper is also a native speaker of Saraiki. The data are presented below and analyzed in the next section using constraint-based phonology of optimality theoretic perspective by Prince and Smolensky (2004).

As pointed out above, insertion is a commonly observed trend in loanword adaptation. The same trend is also observed in Saraiki. In the following examples in (2), we present a set of Arabic loanwords in Saraiki which show that a vowel is inserted to break consonant clusters in the coda position. Interestingly, the inserted vowel is the same as already exists in the stem of the loanword. Consonant gemination also accompanies for the sake of prosodic requirements.

3.1 Vowel Insertion[1]

(2)

Arabic	**Saraiki**	**Glosses**
/qaʈl/	[**qəʈ.ʈ**əl]	Murder
/saɖr/	[**səɖ**.ɖər]	President
/saʈr/	[**səʈ.ʈ**ər]	Concealed body parts
/ʔsˁl/	[**əs.**səl]	original
/ʔθr/	[**əs**.sər]	impact
(b)		
/ðikr/	[**zik**.kir]	mention
/misˁr/	[**mis**.sir]	Egypt
/wiʈr/	[**ʋiʈ.ʈ**ir]	a kind of prayer
/ðihn/	[**ziɦ**.ɦin]	mind
/miθl/	[**mis**.sil]	example
/fiʈˁr/	[**fiʈˁ**.ʈˁir]	An Eid
(c)		
/quʈˁr/	[**kuʈˁ**.ʈˁur]	circumference
/ðˁulm/	[**zul**.lum]	injustice
/ʤuhɖ/	[**ɟuh**.huɖ]	struggle
/ɦukm/	[**ɦuk**.kum]	order
/ʕuðr/	[**uz**.zur]	excuse
/buxl/	[**bux**.xul]	miserliness

In the above data, we notice that a vowel is inserted in the loanwords to break coda-clusters. Along with this, the consonant in the coda of the penultimate syllable also doubles as a result of which the penultimate syllable becomes heavy, and the ultimate syllable gets onset. If we do not geminate the consonant in the stem, either the left syllable will be light, or the penultimate syllable will be onset-less. Both are unacceptable in

[1] The stressed syllable in the output is highlighted bold.

Saraiki grammar. Interestingly, Saraiki does not accept word-final clusters in the above loanwords although similar structures do exist in indigenous words of Saraiki in a limited context. For example, in Saraiki, words with obstruent+rhotic clusters like 'gadr'(spot) are legitimate but similar Arabic words like 'badr' (moon) are not acceptable and are changed into CVC.CVC form (e.g. '**bəd̪**.d̪ər')in Saraiki. Saraiki speakers insert a vowel and geminate the consonant in the original Arabic word (Syed and Aldaihani, 2014). The following data set provide examples of Saraiki with coda clusters.

(3)

Words	**Glosses**
/ʊəd̪ʱr/	wrinkles
/səndr/	instrument
/məndr/	incarnation
/ʊətr/	(land) ready for plough
/putr/	son
/mundr/	incarnate
/mutr/	pee
/sutr/	smallest unit of measurement
/sitr/	instrument/utensil
/mitr/	friend
/ce:tr/	name of the first month in calendar
/ʊe:tr/	cut (cloth)
/ka:tr/	cut-piece

All these words show that a cluster of an obstruent and a rhotic is legitimate in Saraiki language. But in the previous examples presented in (2), it is apparent that the same clusters are not accepted in Saraiki as loanwords from Arabic. Similarly, Saraiki also allows occurrence of different vowels in a word consisting of two syllables, which means Saraiki does not strictly obey the constraint that demands vowel harmony. The following words of Saraiki do not show any systematic vowel harmony.

(4)

Words	**Glosses**
/kʰəkʰir/	wasp nest
/ʈiʈʈər/	pheasant
/kukkiɽ/	hen
/ɓiʈʈuɽ/	tandem
/ukkir/	scratch

/ussir/	construct
/nipp^{h}ər/	too young to do anything

Along with this, Saraiki also does not strictly prohibit vowel harmony in the indigenous words as the following examples reflect.

(5)

Words	**Glosses**
/ʊis.sir/	forget
/nis.sir/	blossom
/ʊiɓ.ɓil/	out of senses
/ʃib.b^{ɦ}il/	glutton
/nit̪.t̪ir/	emerge
(b)	
/kuk.kuɽ/	cock
/p^{h}up.p^{h}uɽ/	father's sister's husband
/ʈuk.kur/	loaf/bread
/nuk.kul/	something cooked with meat
/ɟuk.kuɽ/	yoke
(c)	
/sət̪.t̪^{h}əl/	thigh
/ʊək.k^{h}ər/	family
/kək.kər/	extreme cold
/ʈəɓ.ɓər/	family
/zəl.l^{ɦ}əl/	coercion

Based on these data, what we gather is that, neither Saraiki strictly demands vowel harmony nor does it prohibit harmonious vowels in di-syllabic words. But in loanwords it demands vowel harmony in the contexts where vowel insertion is required. Similar vowel harmony has also been reported in loanword adaptations of other languages like Hungarian (Hyllested, 2017), Hebrew (Cohen, 2013), etc.In the related literature, we come across different views on vowel harmony. Boersma and Hamann (2009) consider phonetic cues as a function of harmonious epenthetic vowels. But Kim and Kochetov (2011)consider that epenthetic vowels are phonologically triggered in lexical and loanword environment. We shall comment on it in section 4.

3.2 Stress Shift

Another important repair strategy adopted in Saraiki loans of Arabic origin is gemination. The words of LH (Light-Heavy) syllables in Arabic change into **H**H in Saraiki[1]. See these examples in the following data set.

(6)

Arabic	**Saraiki**	**Glosses**
/ðˁa.qi:/	[**zəq**.qi:]	A name
/raɖˁi:/	[**raz**.zi:]	content, patient, happy
/wali:/	[**ʊəl**.li:]	guardian
/sˁa.ħi:ħ]	[**səɦ**.ɦi:]	correct
/wasˁi:/	[**ʊəs**.si:]	next of kin/inherited
/ða.qi:/	[**zəq**.qi:]	wise/sage

The above data show that Saraiki does not accept iambic feet form in the Arabic loanwords. Therefore, it changes a light syllable into a heavy syllable so that the stress may justifiably move to the left edge of the word that is only possible when the left syllable is equally heavy. Saraiki is a strictly quantity sensitive language and assigns stress to only heavy syllables. Saraiki prefers stress on the left edge in bi-syllabic words if both syllables have equal weight. But it does not allow di-syllabic words of LL structure or word-final light syllables e.g., with HL structure. Therefore, the only option left is to insert a mora in the left syllable. In that case, Saraiki inserts a consonant, which already exists in the original word of Arabic following the principles of maximal preservation of input (Paradis and LaCharite, 1997). Insertion of the same consonant in a word, that results in gemination, does not seem to incur maximum violation of faithfulness at perception level. On the other hand, insertion of another consonant would have clearly exposed such violation at perception level. For example, if coronal consonant [t] (which is the most unmarked option and is used as an epenthetic consonant in some languages(Kager, 2010)) is inserted in all such words, the hypothetical output would be as below;

(7)

/ða.qi:/→ *[**zət**.qi:] (instead of optimal [**zəq**.qi:])

The hypothetical output *[**zət**.qi:]satisfies prosodic requirements but it clearly indicates insertion more robustly than the actual output [**zəq**.qi:]. Therefore, normally, Saraiki prefers the doubling of the consonant, which already exists in the original input, in the slots where, for prosodic reasons, an additional mora is required. In terms of auto-segmental

[1] (Stressed syllables are highlighted bold)

phonology (Goldsmith, 1990), it is spreading of a consonant to the adjacent empty slot. An interesting thing, in this regard, is that Saraiki accepts L**H** type in indigenous words which bear stress on the ultimate syllable of iambic feet form. But it does not seem to accept the same structure in the loanwords. Being quantity sensitive, Saraiki stresses heavy ultimate syllables in a word of light-heavy (L**H**) syllables in the indigenous words. For example, see such Saraiki words in the following data set.

(8)

Words		**Glosses**
/mi.**la:/**	meet	
/ʊi. **la:/**		coax
/ə.**la:/**		voice
/cə. **la:/**		move
/pə.**ka:/**		cook

This confirms that Saraiki is not a strictly Trochaic language. Although it prefers trochaic structure of metrical feet, it still allows more marked Iambic foot form in indigenous words. However, this structure is acceptable only in indigenous Saraiki words but not in loanwords. In other words, Saraiki obeys markedness constraints in the loanword-grammar but in the L1 grammar, it is more faithful to its native lexicon. This indicates existence of a third grammar in the form of loanword grammar. In the next section, we present an Optimality Theory (OT)-based analysis of these adaptations.

3.3 OT-based analysis of data

In this section, we present an OT-based (Prince & Smolensky, 2004) analysis of the above data. We have highlighted two types of changes in Saraiki loanwords of Arabic in the above section. Firstly, words ending on obstruent-rhotic clusters, which are broken by insertion of a vowel, tha is harmonious to the original vowel in the stem of the input. The coda consonant of the penultimate syllable also geminates changing words of CVCC structure to CVC.CVC. Secondly, right-headed words of LH structure change into left-headed words through gemination of the coda of Arabic words of CV.CVV structure yielding an output as CVC.CVV. In this way, stress shift occurs in the loanwords. For analysis of these data, we depend on the following constraints in classical OT(Prince & Smolensky, 2004).

*COMPLEX^{CODA} (*CC]σ: Coda clusters are not allowed(Kager, 2010).
WEIGHT-TO-STRESS PRINCIPLE (WSP): Heavy syllables are stressed (Prince & Smolensky, 2004).
NONFINALITY (NonFin): Stress does not fall on the final syllable of a prosodic word(ibid).
HARMONY (HARM): Epenthetic segments of an output must agree for the feature present in the input(Louriz & Kenstowicz, 2009).
MAXIMAL-ONSET-PRINCIPLE (MOP): A consonant occupies onset position in a syllable (Clements, 1990).
SEGMARKED: Non-existent segments in the L1 phonemic inventory are prohibited in loanword output (Seo, 2016).
DEP-IO: Do not insert (MCcarthy & Prince, 1995).
MAX-IO: Do not delete (McCarthy & Prince, 1995).

Table 3.1: Insertion, vowel harmony and gemination in loanword adaptation[1]

/qaʈl	WSP	MOP	NonFin	*CC]σ	HARM	MAX	DEP-IO
a. kəʈl				*!			
b. kəʈ						*!	
c. kə.**ʈəl**			*!				*
d. **kə**.ʈəl	*!						*
e. **kəʈ.**əl		*!					*
f. kə**ʈ.**gəl					*!		**
g. **kəʈ.**gul					*!*		**
h. ☞**kəʈ.**ʈəl							**

The faithful candidate 'a' is rejected because it has an illegitimate consonant cluster which is not permitted in Saraiki loanword grammar. The rejection of candidate 'b' which emerges as a result of consonant deletion clearly indicates that the loanword grammar of Saraiki language prefers insertion to deletion; hence the ranking MAX-IO>>DEP-IO[2]. The

[1] The data presented in this paper does not provide any evidence that MOP and WSP are highest ranked and MAX-IO is ranked lower than NonFin, *CC]σ and HARM. However, we have examples (discussed somewhere else) which confirm the status of these constraints in loanword grammar of Saraiki.
[2]Tsuchida's (1995) LOANWORD-CORRESPONDENCE constraint can also be used instead of MAX-IO here.

candidate ‘c’ does not emerge a winner as it has stress on word-final syllable which is a violation of Non-Fin. As it is already pointed that Saraiki is a quantity sensitive language, therefore, WSP that demands placement of stress on a heavy syllable only, is also inviolable. Thus, a weak syllable does not qualify for stress placement in the presence of a heavy syllable. The candidate ‘d’ is rejected on account of violation of WSP. And if we place stress on the penultimate syllable to satisfy NonFin as in candidate ‘e’, it will be a violation of MOP. The candidates‘f’ and ‘g’ both violate the higher ranked constraint HARM that demands that an epenthetic segment (vowel and/or consonant) is harmonious to the stem. This constraint is annoyed if either the inserted vowel or consonant is different from the adjacent segments of the stem. Resultantly, candidate ‘h’ emerges as a winner in the race.

Now we turn to the second phenomenon i.e., stress-shift using gemination/insertion as a repair strategy. In this tableau, candidate ‘a’ is rejected for violation of WSP, and ‘b’ for that of NonFin. The candidate ‘c’ cannot emerge as a winner since it does not obey HARM and ‘d’ is rejected for violation of MOP. Therefore, the candidate ‘e’ becomes the winner because it only violates two lower ranked constraints MAX-IO and DEP-IO. In this competition, the candidate ‘f’ with original Arabic vowel [a] is also rejected because Saraiki does not have this vowel in short form. Therefore, Saraiki speakers substitute Arabic [a] with the corresponding short vowel.

Tableau 3.2: Gemination and stress shift

/naqi:/	WSP	MOP	NonFin	SEGMARKED	HARM	MAX	DEO-IO
a. **nə.**qi:	*!					*	*
b. nə**.qi:**			*!			*	*
c. **nə**q.di:					*!	*	**
d. **nəq**.i:		*!				*	*
e. ☞**nəq**.qi:						*	**
f. **naq**.qi:				*!			*

4. Discussion

The above tableaux present two significant points. First, Saraiki loanword grammar does not accept cluster of a stop and a rhotic on coda position

whereas the same cluster is acceptable in the indigenous lexicon. Saraiki has words of indigenous origin with such clusters (as listed in (3) above), which can be adapted by insertion or deletion, but the L1 grammar does not do that with such indigenous words. This means faithfulness constraints like MAX-IO and DEP-IO are higher ranked than *CC]σ in the L1 grammar. Along with this, Saraiki demands vowel harmony in loanwords of a specific type, but similar indigenous words do not observe this constraint. It means in the L1 grammar IDENT-IO is higher ranked than HARM.

Secondly, the structures of LH type of syllables are not acceptable in loanword grammar although the same type is acceptable in the L1 grammar. In terms of OT, NonFin is ranked lower in the L1 grammar but higher in the loanword grammar in the current context. This also ultimately results in bringing NonFin higher ranked than the relevant faithfulness constraints in the loanword grammar. In this way, speakers seem to have developed a parallel grammar along with the indigenous L1 grammar that is reflected in(9) below;

(9)

L1 Ranking: MAX-IO, DEP-IO >>*CC]σ, HARM, NonFin
Loanword Ranking:*CC]σ, NonFin>>MAX-IO >> DEP-IO

In the opinion of Cohen (2013), besides the grammar of the native language, speakers also have access to the universal grammar (UG)that they invoke in developing or adopting such patterns as apparently do not exist in the native grammar. Other linguists have also demonstrated that access to the UG not only remains intact but active throughout life and can influence acquisition of a second language(Brown, 1998, 2000; Flege, 1995). The same is also true of loanword phonology. This leads us to the much debated question of whether two grammars exist in the same or different mental space of a speaker(Cook, 2005). Without going into the details of this debate, we realize that L1 grammar does influence a second grammar (a second language or loanword lexicon) more or less. The nature of influence depends on different factors.Itô and Mester (2001) claim that lexicons exist in learners' minds in various strata. Paradis and LaCharité (1997) divide these strata into core and peripheral zones. They further claim that parts of lexicon lying in the periphery (which are loanwords), may be influenced from some other grammar. This other grammar is either L1 grammar or the UG. In the opinion of Paradis and LaCharité (1997),when the influence of L1 grammar weakens, the

influence of UG increases which results into the emergence of the unmarked (McCarthy & Prince, 1994). In the parallel ranking for the loanword lexicon (illustrated in (9)), we observe that when faithfulness constraints move to the lower stratum, the markedness constraints force such changes in the input as are not triggered by the grammar of the source language (Arabic), rather, the most unmarked options emerge as output. Vowel harmony is also a similar move towards the most unmarked option. A large body of literature on L1 acquisition has already established that vowel harmony commonly emerges as unmarked and easily adoptable option in child language acquisition(Smith, 2010).

Cohen (2013)has stated that partial or sub-system harmony can occur in the loanword lexicon of even those languages which do not strictly follow vowel harmony. The same we observe in the current case. Neither Saraiki grammar nor that of the source language (Arabic) strictly obeys vowel harmony constraint. But we find it only in a particular context of loanword grammar. This indicates that only parts of the loanword grammar, which are influenced by the UG, develop a third grammar which is different from the L1 grammar as well as that of the source language (also called borrowing language or L_b).

Similar trends have already been noted in the literature. For example, Japanese uses insertion for adaptation of illegitimate consonant clusters and coda consonants in loanwords but it uses deletion for repairing the same in indigenous phonology (Smith, 2005). A similar practice has also been noticed in Korean (Kang, 2003). Commenting on this issue, Smith says (2006)

> Languages like Japanese, with epenthesis only for loanwords, are significant because they clearly demonstrate that the nonloan phonology cannot be the only mechanism responsible for loanword adaptation—if it were, then the same repair strategy that is used for the nonloans would be chosen for loanwords as well. The question remains, however, just what factors beyond the native L*b* phonology are responsible for adaptation effects. Some researchers have proposed adding loanword-specific principles or constraints to the phonological system..” (pp. 65-66).

These words of Smith on ‘loanword-specific principles or constraints’ echo the existence of a third phonology in the mind of learners/speakers. According to Tsuchida (1995), Japanese does not allow gemination of voiced stops in indigenous lexicon but the same is allowed in loanwords

taken from English. Similarly, Japanese geminates codas of stressed syllables to make it heavy, a constraint which does not exist in higher ranked position in the native Japanese phonology. Therefore, Japanese loanword phonology has a constraint ranking different from that of native Japanese phonology (Tsuchida, 1995). The data presented in the current study also reflects a similar picture in the context of Saraiki loanword grammar of words of Arabic origin. At this stage, we shall refer to the mechanism of loanword adaptation yielded in (1) and reproduce it below in (10).

(10)

L2 source → Perceptual Module → Non-native percept → L1 grammar → Adapted loanwords

In this schema, we need to add UG because the third phonology that emerges in the form of specific constraint ranking to reflect loanword grammar is directly governed by the UG. Thus, we demonstrate that L1 grammar and UG both contribute in the development of a third grammar in loanword phonology.

5. Conclusion

In this paper, examples of loanword adaptation in Saraiki were presented. The source language is Arabic. The data showed that Saraiki speakers do not accept coda clusters in loanwords, though some of those structures are legitimate in their indigenous L1 grammar. To break such clusters, they insert vowels which are harmonious to those in the stem of the original input. Similarly, they also change disyllabic words of light-heavy structure into heavy-heavy structure by geminating the coda of the penultimate syllable so that stress may be shifted to the left edge of the loanwords. Again, we have provided evidence that such right-headed words also exist in Saraiki, but they are not allowed in the loanword grammar. In both contexts, Saraiki resorts to the most unmarked option for adaptation of the input. The paper concludes that there is a third grammar which develops parallel to that of L1 grammar in the mind of speakers which is governed by different factors including the Universal Grammar.

References

Bashir, E., & Conners, T. J. (2019). *A Descriptive Grammar of Hindko, Panjabi, and Saraiki*. Berlin: De Gruyter Mouton.

Boersma, P., & Hamann, S. (2009). Loanword adaptation as first-language phonological perception. In A. Calabrese & W. L. Wetzels (Eds.), *Loanword phonology* (pp. 11-58). Amsterdam: John Benjamins.

Broselow, E. (2015). The typology of position-quality interactions in loanword vowel insertion. In Y. Hsiao & L.-H. Wee (Eds.), *Computing phonological studies* (pp. 292-319). Newcastle-upon-Tyne: CSP.

Brown, C. A. (1998). The role of the L1 grammar in the L2 acquisition of segmental structure. *Second Language Research, 14*(2), 136-193.

Brown, C. A. (2000). The interrelation between speech perception and phonological acquisition from infant to adult. In J. Archibald (Ed.), *Second language acquisition and linguistic theory* (pp. 4-63). Malden Mass: Blackwell.

Calabrese, A., & Wetzels, W. L. (2009). *Loanword phonology*. Amsterdam: John Benjamins.

Clements, G. N. (1990). The role of the sonority cycle in core syllabification. In J. Kingston & M. E. Beckham (Eds.), *Between grammars and the physics of speech: Papers in Laboratory Phonology* (Vol. 1, pp. 283-333). Cambridge: CUP.

Cohen, E.-G. (2013). The emergence of the unmarked: Vowel harmony in Hebrew loanword adaptation. *Lingua, 131*, 66-79.

Cook, V. (2005). Introduction: The Changing L1 in the L2 User's Mind. In V. Cook (Ed.), *Effects of the second language on the first*. Buffalo: Multilingual matters.

Flege, J. E. (1995). Second language speech learning: Theory, findings, and problems. In W. Strange (Ed.), *Speech perception and linguistic experience: Issues in cross-language research* (pp. 233-277). New York: Timonium, MD.

Goldsmith, J. (1990). *Autosegmental and metrical phonology*. Oxford: Blackwell.

Hyllested, A. (2017). Loanword adaptation in Hungarian: unexpected vowel harmony in material of Latin and Slavic provenance. *Acta Linguistica Hafniensia International Journal of Linguistics, 49*(1), 1-11.

Itô, J., & Mester, A. A. (2001). Covert generalizations in Optimality Theory: the role of stratal faithfulness constraints. *Studies in Phonetics, Phonology and Morphology, 7*, 273-299.

Jacobs, H., & Gussenhoven, C. (2000). Loan phonology: Perception, salience, the lexicon and OT. In F. v. d. L. J. v. d. W. J. Dekkers

(Ed.), *Optimality Theory: Phonology, Syntax, and Acquisition* (pp. 193-209). Oxford: Oxford University Press.

Kager, R. (2010). *Optimality Theory* (10th ed.): Cambridge University Press.

Kenstowicz, M. (2003). Salience and similarity in loanword adaptation: a case study from Fijian

Language Sciences, 29, 316-340.

Kenstowicz, M. (2010). *Loanword Phonology and Enhancement.* Paper presented at the 2010 Seoul International Conference on Linguistics, Universal Grammar and Particular Languages, Seoul.

Kim, K., & Kochetov, A. (2011). Phonology and phonetics of epenthetic vowels in loanwords: Experimental evidence from Korean. *Lingua, 121*, 511-532.

LaCharité, D., & Paradis, C. (2005). Category preservation and proximity versus phonetic approximation in loanword adaptation. *Linguistic Inquiry, 36*, 223-258.

Louriz, N., & Kenstowicz, M. (2009). Reverse engineering: Emphatic consonants and the adaptation of vowels in French loanwords into Moroccan Arabic. *Brill's Journal of Afroasiatic Languages and Linguistics, 1*(1), 41-74.

McCarthy, J., & Prince, A. (1994). The emergence of the unmarked: Optimality in prosodic morphology. *Proceedings of the North East Linguistic Society, 24*, 333-379.

MCcarthy, J., & Prince, A. (1995, 09/12/2020). *Faithfulness and reduplicative identity*.

O'Brien, E. (1881). *Glossary of the Multani language compared with Punjábi and Sindhi*. Lahore: The Punjab Government Civil Secretariat Press.

Paradis, C., & LaCharité, D. (1997). Preservation and minimality in loanword adaptation. *Journal of Linguistics, 33*, 379-430.

Pariente, I. (2017). Stress, Syncope, Epenthesis and the Duke of York Gambit in the Modern Hebrew Verb System. *Lingua*.

Peperkamp, S., & Dupoux, E. (2003). *Reinterpreting loanword adaptation: the role of perception.* Paper presented at the International Congress of Phonetic Sciences.

Peperkamp, S., Vendelin, I., & Nakamura, K. (2008). 2008. On the perceptual origins of loanword adaptations: experimental evidence from Japanese. *Phonology, 25*, 129-164.

Prince, A., & Smolensky, P. (2004). *Optimality Theory: Constraint Interaction in Generative Grammar*. Malden, MA & Oxford: Blackwell.

Seo, H. (2016). Phonotactic Adaptation in Loanwords: Insertion vs. Deletion. *언어학, 24*(3), 37-62.

Shackle, C. (1976). *The Siraiki language of central Pakistan: A reference grammar*. London: University of London School of Oriental and African Studies.

Silverman, D. (1992). Multiple scansions in loanword phonology: evidence from Cantonese. *Phonology, 9*, 289-328.

Smith, N. V. (2010). *The acquisition of phonology: A case study*. Cambridge: Cambridge Univ Press.

Soohani, B., & Samaei, S. M. (2018). Iranian-Balochi dailects loanword phonology: An optimality theoretic approach. *Dialectologia, 21*, 131-150.

Syed, N. A., & Aldaihani, S. M. (2014). The emergence of the unmarked in loanword phonology: A harmonic serialism account. In E. Cyran & J. Szpyra-Kozłowska (Eds.), *Crossing Phonetics-Phonology Lines* (pp. 219-234). Newcastle-upon-Tyne: Cambridge Scholars Publishing House.

Yip, M. (2006). Yip, Moira. 2006. The symbiosis between perception and grammar in loanword phonology. *Lingua, 116*, 950-975.