An Optimality Theoretic Analysis of Stress Assignment in Arabic Loanwords in Saraiki: Implications for Learners of Arabic in Pakistani Religious Schools

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Abstract

This paper highlights changes which occur in Saraiki loanwords of Arabic origin to satisfy the prosodic constraints of the L1 grammar. Saraiki is a quantity sensitive language, which always stresses the heaviest syllable in a word. If a word has two syllables of equal weight, stress falls on the left or penultimate syllable. Saraiki does not allow an unstressed heavy syllable on the left-edge of a word. These constraints trigger paradoxical changes, which result into insertion and/or deletion in the Arabic loanwords. The words of LH (Light-Heavy) syllables in Arabic change into HH in Saraiki. This is done by insertion of a consonant in the penultimate light syllable which results in gemination (Arabic /abu:/ →Saraiki /ˈəb.bu:/). Contrary to this, sometimes Saraiki speakers delete a consonant or a mora in the penultimate syllable, if the ultimate syllable is super-heavy, to satisfy the constraint which demands stress on heavy syllable. This determines ranking between 'Weight-to-Stress principle' and 'stress penultimate' constraints. The result is vowel shortening in the penultimate syllables of bi-syllabic words. Similar deletion also targets consonants in tri-syllabic words which results into degemination. Following Optimality Theory (OT) paradigms, this paper provides evidence to support the 'phonological approach' in loanword phonology.

Keywords: Loanwords; Syllable weight; Optimality Theory; Metrical Stress; native grammar

1. Introduction

The main debate in the realm of loanword phonology is related to the loanword adaptations taking place in source (L2) forms. There are mainly

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three theoretical viewpoints in relation to the loanword adaptation process in which the first two approaches explain the two extreme versions for loanword adaptation phenomenon namely, 'The Perceptual approach' and 'The Phonological approach'. However, the third approach is known as Phonetic-Phonology or Hybrid approach, and it acts like a merger between the two extreme loanword approaches. The Perceptual approach claims that loanword adaptation takes place at perceptual level due to unfaithful mapping of phonetic cues (acoustic or auditory) of L2 forms (source language) onto L1 forms (native language) (cf. Peperkamp and Dupoux, 2003; Vendelin and Peperkamp, 2004). This suggests that the role of phonology is indirect because loanword adaptations are influenced rather than computed by phonological grammar of L1 forms (Peperkamp, Vendelin & Nakamura, 2008, p. 131).

On the other hand, the proponents of 'The Phonological Approach' argue that since bilinguals are the main transporters of loanwords, they have also an access to the underlying representation of L2 words and thus they produce loanwords by using L1 (native) grammar. The L2-to-L1 mapping occurs on the basis of phonological distance of the sound categories between L1 and L2 rather than phonetic distance between categories (Paradis and LaCharité, 1997; 2008) although some linguists (e.g., Flege, 1995, p.236) consider phonetic distance as a major factor in such mappings. Thus, a non-native (L2) sound is replaced by the native (L1) sound that is phonologically closest (in terms of features) (Ito and Mester, 1995, p.185; Paradis and LaCharité, 2008; Gussenhoven and Jacobs, 2005). LaCharité and Paradis (2005, p.227-230) further defend the phonological stance by arguing that all borrowing situations cannot be explained by the perceptual models. They maintain that perceptual approaches confuse loanword adaptation with the 'perceptual deafness of L2 learners. They show that errors found in the adaptation process, caused by phonetic similarity, are not attested in loanword adaptation in their project (LaCharité and Paradis, 2005, p.227). In the similar vein, Gussenhoven and Jacobs (2005, p.238) and Calabrese & Wetzels (2009) claim that speakers of all languages have the ability to

perceive sounds in any other language, but it may be possible that in their own language (L1), the different realizations of segments are not as such an important aspect to notice. Lastly, the advocates of an intermediate approach namely 'The Phonetic-Phonology Approach' suggest that the input to the adaptation process depends on how the non-native (L2) sounds (in the form of acoustic signals) are perceived by the borrowers and then, this perception based input is further filtered and modified by the phonological grammar of native language (e.g. Silverman, 1992; Yip,1993; Steriade, 2001; Kang, 2003; Kenstowicz, 2003; Kenstowicz and Suchato, 2006; Miao, 2006).

The current paper echoes the phonological stance by presenting a detailed analysis of the phonological adaptation of stress patterns of Arabic loanwords in Saraiki. This phonological analysis is worked out within OT framework (Prince and Smolensky, 1993; 2004) which is most relevant to show that loanword adaptation is phonological. The OT constraints will show the conflict that typically arises in trying to remain faithful to the loanword source while still satisfying native language (L1) at prosodic level (which is stress here). We will argue that if a loanword does not conform to the L1 grammatical rules/constraints, it uses repair strategy to become an acceptable word in Saraiki. We will highlight the phonological processes which are used to repair illicit source forms to conform to the native stress system. We will also explain how consonant gemination and degemination occur to maintain the native stress. This analysis will enable us to understand the native phonological system of Saraiki as well as it will contribute to enrich the literature of how the Indo Aryan language-Saraiki undergo loanword adaptation to conform to the phonological theory in general.

There is a lot of literature on the study of loanword phonology. Arabic being the language of Islam has a pivotal role in the enrichment of lexicons of languages of the Islamic world. Therefore, we find a lot of studies on adaptation of Arabic words in many languages of the world. For example, Alahmari (2019) has studied adaption of Arabic words in Turkish in accordance with the prosodic requirements of the host language. They have found vowel epenthesis and vowel shortening as two major repair strategies in loanword adaptation to satisfy the constraints of L1 grammar. Similar

trends have also been noticed in Saraiki loanword adaptation of Arabic words discussed below. Abdelhadi (2022) investigates the stress system of loan words in Bedouin Jordanian Arabic from an optimality theoretic perspective using Haye's (1995) metrical theory as a paradigm of prosodic analysis. We see a lot of similar other studies which have analyzed stress pattern of loanword adaptation using Arabic as a source language. However, we do not see any such study in Saraiki. Thus, this study is a first step towards a more comprehensive account of stress assignment in Arabic Loanwords in Sariki.

The current study has a relevance with adult second language acquisition. The difficulty of vocabulary knowledge of target language is strongly connected to the langue acquisition therefore loanwords play a key role in the language acquisition of the target language (in our case Arabic). Some researchers (see Grabe, 1991; Laufer & Nation, 1999; Schmitt, 2010; Schmitt & Schmitt, 2020) found that vocabulary acquisition (i.e. loanwords) is an important step in the second language acquisition (target language) for both low- and high-proficiency students.

Ellis and Beaton (1993) claim that phonological similarity between lexical item of L2 (target language) and the L1 translation (native language) has a great influence on learning L2 vocabulary. Schmitt (2010) debates that ''words with a 'cognate' translation in the FL [Foreign Language] ...were learned far better than those with a non-cognate translation'' (Schmitt, 2010, p. 72).

In the present article, Arabic loanwords undergo phonological adaptations in order to fit in the native territory (i.e. Saraiki) and make it easier for students learning Arabic in religious schools (Madrasas) in Pakistan.

1.1 Background to Saraiki Language

Before moving on to the presentation and analysis of Arabic loanword adaptation in Saraiki under prosodic constraints of the L1, we need to summarize some well-known generalizations already described in the

literature. Since the current study aims to highlight the role of L1 stress system on loanword adaptation, deletion or substitution of consonants of Arabic which is not triggered by prosodic requirements, are not discussed or analyzed in detail in this paper. They are simply reproduced in the following lines from Syed and Aldaihani (2014);

a. In Saraiki, word-final /h/ and pharyngeal fricative /ʕ/ and glottal stop /ʔ/ of Arabic on all positions, are deleted.
b. Arabic consonants /q/, /θ/, /ð/ are substituted with Saraiki /k/, /s/ and /z/ respectively.
c. Arabic /ħ/ and /ɦ/ are merged into /ɦ/ in Saraiki.
d. Arabic pharyngealized consonants lose their secondary articulation in Saraiki; thus /tˤ/, /dˤ/, /sˤ/ and /ðˤ/ of Arabic become /t̪/, /d̪/, /s/ and /z/ respectively, in Saraiki.
e. Arabic has long /a:/ and short versions of /a/ low vowel but corresponding to this, Saraiki has a single low vowel /a/ which is long and the corresponding short vowel in Saraiki is schwa. Therefore, /a/ in Arabic is substituted with /ə/ in Saraiki.

2. Data Collection Procedure

Actually, the words were observed and noted by the second author (who is himself a native speaker of Saraiki) during daily conversations. Later, the words were verified from two sources, namely, by two native speakers of Saraiki and the Saraiki dictionary. Once the words had been selected, the same were verified from ten native speakers of central Saraiki. The second author of this paper is also a native speaker of central Saraiki. He also confirmed the pronunciation of all examples produced in this study from ten native Saraiki speakers. Only those examples which were verified by all participants are included in this study.

The data are analyzed using Haye's (1995) metrical theory and is described phonologically using Classical version of Optimality theory (Prince and Smolensky, 1995). Standard IPA symbols are used for phonetic representation of actual original pronunciation of words of Arabic in the input column and that of Saraiki pronunciation in the output columns as noted in Saraiki speech.The whole analysis is done in line with the Phonological Approach adopted by Paradis and LaCharité (1997; 2008) in loanword phonology.

3. Data Analysis

3.1 Phonological Account of Stress Assignment in Arabic Loanwords in Saraiki (ALS)

In Saraiki loanwords of Arabic origin, stress patterns are determined with respect to syllable weight and stress window. The phonological processes involved to maintain the weight sensitivity and stress window are consonantal gemination and degemination, vowel shortening and syllable deletion. The data in *1a-1e* show the intervocalic gemination occurs to make the penultimate (left) syllable heavy and thus to conform it to the native (Saraiki) stress rule, i.e. assign stress to the penultimate heavy syllable.

1. Stress in loanwords with penultimate heavy syllable via intervocalic gemination

	Arabic	**Saraiki**		
a.	/abuː/	[ˈ**əb**.buː]	Father	< ابو >
b.	/wu.dˤuː/	[ˈ**wuz**. zuː]	Ablution	<وضو >
c.	/ʕaliː/	[ˈ**əl**.liː]	A name	<علی >
d.	/ʔasad/	[ˈ**əs**.səd]	Lion	<اسد >
e.	/nabiː/	[**nəb**.biː]	prophet	<نبی >

The above examples (in 1a-e) show that in loanwords stress is assigned to the penultimate heavy syllable to follow the native stress system. Since the penultimate syllable in the source language is light, therefore consonantal gemination occurs to make the penultimate heavy. The gemination is achieved through the insertion of a homorganic consonant, which is parsed as a coda of the preceding light left syllable to turn it into a heavy syllable (e.g., /a**b**uː/→**[ə.bu:]** '*father*'). On the other hand, the data in *2a-2d* show a contradictory situation by moving stress from left to right direction due to weight sensitivity.

2. Stress shift due to weight sensitivity

a. /ʃiḍ̪ḍ̪aːḍ̪/ [ʃi.ˈḍ̪aːḍ̪] A historical character <شداد >
b. /saṯ̪ṯ̪ar/ [sə.ˈ**ṯ̪a**:**r**] One who covers <ستار >
c. /xaṯ̪ˤ.ṯ̪ˤaːb/ [xə.ˈ**ṯ̪a**:**b**] Title/address <خطاب >
/ṯ̪aw.waːb/ [ṯ̪ə.ˈ**ʊa**:**b**] One who repents <تواب >
d. /ʕal.laː.mah/ [ə.ˈ**la**:.maː] Scholar <علامہ>

The data in 2a-2d show the violation of the above stress rule shown in 1a-1d, i.e., stress the left heavy syllable only. Here the loanword data show that as a result of degemination (i.e. consonant deletion), left heavy syllable becomes light (e.g. /ʃiḍ̪ḍ̪aːḍ̪/→[ʃi.ˈ**ḍ̪a**:**ḍ̪**]) and thus does not qualify for stress assignment and the stress moves to the final super-heavy syllable. The reason for this is that a super-heavy syllable cannot be left unstressed even on the ultimate position. The example e also reflects a similar trend i.e., consonant deletion and degemination but stress is placed on the penultimate syllable in this example because the ultimate and penultimate syllables have equal weight.

There is another similar phonological process which happens via vowel shortening or in other words by deletion of a mora in the penultimate syllable which turns the left (penultimate) heavy syllable into light syllable and thus stress moves to the final super-heavy syllable.

3: stress on the final superheavy syllable by vowel shortening of penultimate syllable

a. /qaː.nuːn/ [qə.ˈ**nu**:**n**] Law <قانون >
b. /haː.ruːn/ [hə.ˈ**ru**:**n**] A name <هارون >
c. /ʃaɪ.ṯ̪aːn/ [ʃi.ˈ**ṯ̪a**:**n**] Devil <شیطان >
d. /ṯ̪aː.riːx/ [ṯ̪ə.ˈ**ri**:**x**] Date/History <تاریخ >
e. /ṯ̪aː.vil/ [ṯ̪ə.ʊiːl] Interpretation <تاویل >

The data in 3a-3e show that due to vowel shortening the penultimate heavy syllable changes into a light syllable, and thus, conforms to the native stress rule (i.e., stress the heavy penultimate syllable). Consequently, stress is placed on the final superheavy syllable. In terms of metrical theory, the data in 2 and 3 suggest that stress direction from right to left edge of the word dominates over the left-to right direction of stress in foot construction.

There is another generalization concerning the stress shown in data 4a-4d (below).

4. Syllable deletion to maintain the stress window up to the penultimate syllables

a. /faː.ʈ̪i. mah/ [ˈ**faː.ʈ̪**ma] A Nam <فاطمہ
b. /qaː.ʈ̪i. lah/ [ˈ**qːaʈ̪**la] Murderer (female) < قاتلہ>
c. /faː.sˁi. lah/ [ˈ**fa**ː**s**.la] Distance < فاصلہ>
d. /ʈ̪aˁː.li.baːn/ [ˈ**ʈ̪a**ː**l.**baːn] Students <طالبان>
e. /mu. ʈ̪aˁː.li.bah/ [mu.ˈ**ʈ̪aː**l.ba] Demand <مطالبہ>
f. /mu.qaː.bi.lah/ [mu.ˈ**qaː**b. la]Competitions < مقابلہ>

The data shown in 4a-4d reveal that final syllable in source language are heavy whereas the antepenult syllable is also heavy and can qualify for stress. In the first four examples, the ante-penultimate syllables are heavy, so they qualify for stress and satisfy ALIGN-L but the language places TROCHEE higher than ALIGN-L. So, it deletes a syllable and re-syllabifies the input in such a way that each input changes into a di-syllabic word satisfying both ALIGN-L and TROCHEE simultaneously. In example '4d' ante-penultimate and ultimate both have heavy and superheavy syllables, respectively. To resolve this conflict, a syllable is deleted rendering the remaining two syllables equally super-heavy. And the examples '4e-f' have four syllables which create a conflict for stress assignment. Thus, it resorts to syllable deletion for adapting the input according to the requirements of the L1 grammar.

Contrary to this, Saraiki speakers delete the penultimate light syllable and turn the trisyllabic words into disyllabic in which the heavy syllable regains the penultimate position and becomes eligible for stress assignment. This shows that Saraiki speakers do not violate the window in stress which is restricted to the final two syllables and thus prohibit stress from falling away from the penultimate syllable even antepenult syllable being intrinsically heavy by virtue of its weight. Another generalization can be drawn from the

4d that in case two syllables carry equal weight, stress preference will be given to the left (penultimate) syllable as shown in 4d (i.e. /ʈaˤ:.li. ba:n/→[ˈʈa:**l.**ba:n]).

To sum up the whole data discussed in 1-4, following generalizations related to the stress system of Saraiki loanwords can be made:

5. Descriptive Generalizations for Stress Assignment in Saraiki Loanwords of Arabic origin

5a. Stress the left (penultimate) heavy syllable only.

5b. In case of a conflict between left heavy and ultimate (right) super-heavy syllable, stress goes to the super-heavy syllable and the penultimate syllable turns into light. This requirement is met via phoneme or mora deletion.

5c. Stress window is restricted to the final two syllables from right edge of a word in the loanword data. This requirement is met via syllable deletion or treating the third (ante-penultimate syllable as extra-metrical.

3.2 The Constraints involved in Stress System of SLs

In the Optimality Theory (OT) analysis, lexical stress has been analyzed by using concepts borrowed from Metrical Stress Theory (MT henceforth) presented by Hayes (1995). The central notion in MST is that stress is a relational property which can be represented in terms of a prosodic hierarchy in which mora is the smallest unit of weight within a syllable (Hayes, 1995). The syllables which bear main stress are organized into feet. In terms of syllable weight, light syllables (CV) are monomoraic, heavy syllables (CVV, CVC, VV or VC) are bimoraic and superheavy syllables (CVVC or CVCC) are trimoraic. Under moraic representation, two light syllables make one foot, whereas a heavy syllable constructs one foot. The stress generalizations of Saraiki loanwords drawn in (5) can be analyzed by using the following constraints from markedness and faithfulness family of constraints in OT:

3.2.1 Markedness Constraints

6. WEIGHT-TO-STRESS PRINCIPLE (WSP): Heavy syllables and superheavy syllables must be stressed. (Prince and Smolensky, 1993; 2004).

7. RHYTHM TROCHEE (Trochee): Head syllables are aligned with the left edge of a foot (Kager, 1993).

8. NONFINALITY (NonFin): Main stress does not fall on the final syllable (Prince and Smolensky, 1993; 2004)

9. FOOT-BINARITY (FtBin): Feet consist of minimum two moras under moraic analysis (McCarthy and Prince, 1995; Prince, 1983).

10. Align-L (Word, Head Foot): The left edge of the word must align with the left edge of the head foot (McCarthy and Prince 1993).

11. Align-R (Word, Head Foot): The right edge of the word must align with the right edge of the head -foot (McCarthy and prince, 1993).

12. C-Harmony: Epenthetic C of an output must agree for the feature present in an input (Louriz and Kenstowicz, 2009).

13. Parse- σ: All σ (syllables) must be parsed by feet (Kager, 1999).

3.2.2 Faithfulness Constraints

14. DEP-IO: Every output segment must have a corresponding segment in the input, that is, insertion is prohibited (McCarthy and Prince, 1995).

15. MAX-IO: Every segment in the input must have a corresponding segment in the output—so deletion is prohibited (McCarthy and Prince, 1995).

3.3 Stress Assignment in SLs: OT Analysis

The tableau 16 & 17 comply with the generalization drawn in 5a&5b to preserve the stress position on the penultimate heavy and final superheavy syllables to conform to the native Saraiki stress rules.

In (16), the optimal surface form is candidate *16a* which maintains stress on the penultimate heavy syllable. The losing candidate *16b-16e* violate all the high ranked constraints at the cost of obeying low ranked constraints Align-R, MAX-IO, DEP-IO and Parse- **σ**. The losing candidate*18e* shows no constraint ranking because of harmonic bounding by the more general constraints AlignR, MAX-IO, DEP-IO of the more specific constraint WSP, Trochee and FtBin. Since the WSP, Trochee and FtBin are not violated in the winning candidate *16a,* therefore are high ranked constraints. The ungrammaticality of losing candidates *16b-16e* shows that stress on the light penultimate iambic syllable is not allowed. Note that tableau *16* yet does not show the ranking argument among high ranked constraints WSP, Trochee and FtBin; It is shown in 17.

16. WSP, Trochee, FtBin, NonFin, Align-L>> Align-R, MAX-IO, DEP-IO, Parse- σ

/ ʔal.laː.mah/	WSP	Trochee	FtBin	NonFin	Align-L	Align-R	MAX-IO	DEP-IO	Parse-σ
a. →ə.(ˈlaː).maː						*	***	**	**
b.(ʔal). (laː).(ˈma)	**W	*W	*W	*W	*W	L	*	L	L
c. (ˈʔal).(laː).(mah)	**W					*	L	L	L
d.(al).(ˈlaː).(maː)	**W	*W			*W	L	**	*	L

e. (ə.ˈla:).ma		*W				*	***	*	*

The winning candidate *17a* (in below) shows that in SLWs stress assignment is strictly correlated to the syllable weight; stress falls on the superheavy final syllable and violates the low ranked constraints: Trochee, FtBin NonFin, Align-L, Parse- σ and faithfulness constraints MAX-IO, and DEP-IO.

17. WSP >> Trochee, FtBin NonFin, Align-L>> AlignR, MAX-IO, DEP-IO, Parse- σ

/qa:.nu:n/	**WSP**	**Trochee**	**FtBin**	**NonFin**	**Align-L**	**Align-R**	**MAX-IO**	**DEP-IO**	**Parse-σ**
a. (qə.ˈnu:n)		*!W		*	*		*	*	
b. →qə.(ˈnu:n)				*	*		*	*	*
c. (ˈqa:).(nu:n)	*W	L		L	L	*W	L	L	
d. (ˈqən).(nu:)	*W	L		L	L	*W	**	**	

The worked example in 18 (below) show that gemination process makes the candidate *18a* winner and thus makes the penultimate syllable heavy to conform to the native stress rules (see 5a-b).The losing candidates *18b-18d* satisfy all low ranked constraints: Align-R, MAX, DEP-IO but disobey all the high ranked constraints due to which these candidates (18b-e) do not compete and come out of the race for an optimal winning candidate (*18a*). Also note that here in candidate 18c the violation of HARM C also plays a role to eliminate this candidate. HARM C is also in harmonic bounding with the low ranked constraints MAX-IO and DEP-IO. Since HARM C is not

violated in winning candidate (*18a*) therefore, it is still considered in high ranked constraint stratum.

18. WSP, HARM C >> Trochee, FtBin, NonFin, Align-L>> Align-R, MAX, DEP-IO, Parse- σ

/a.buː/	WSP	HARM C	Trochee	FtBin	NonFin	Align-L	Align-R	MAX-IO	DEP-IO	Parse-σ
a. →(ˈəb).(buː)	*						*	*	*	
b. (əb).(ˈduː)	*	***W**	*W		*W	*W	L	*	**	
c. (aː).(ˈbuː)	*		*W	*W	*W	*W	L	L	L	
d. (ˈə.buː)	*			*W	*W		*	L	L	

It is to note that WSP is the highest ranked constraint in all the wining candidates in the tableau 16-18. Likewise, Trochee, FtBin, NonFin and Align-L make the second stratum in ranking and thus we *get stress* on the first syllable, due to a *trochaic* foot that is still *aligned* with the *left* edge of the word. Tableau *(19)* mirrors the same constraint ranking as shown in tableau *(19)*. Nevertheless, the penultimate syllable in the input is light therefore does not qualify for the stress assignment and antepenultimate syllable violates the generalization drawn in 5c. Instead of using gemination process, there is a deletion of penultimate light syllable and thus winning candidate *19a* reduces to a disyllabic word to follow the stress window rule (i.e. limit the stress assignment to the penultimate heavy syllable) to conform to the native stress rules.

19. WSP, HARM C >> Trochee, FtBin, NonFin, Align-L>> Align-R, MAX-IO, DEP-IO, Parse- σ

/ fa:.ʈɨ.mah/	WSP	HARM C	Trochee	FtBin	NonFin	Align-L	Align-R	MAX-IO	DEP-IO	Parse-σ
a. →(ˈfa:ʈ).ma:							*	**	*	*
b. (fa:).(ˈʈɨ.mah)	**W				*W	*W	L	L	L	L
c. (fa:ʈ).(ʈɨ.ˈma)	*W		*W		*W	*W	L	*	*	L
d. (ˈfa:). (ʈɨ).(mah)	*W			*W			*	L	L	L

To sum up the constraint rankings shown in the above tableau *16-19* have been checked by using OT Software, version 2.5 (Hayes, 2017). This software provides reliability in OT analysis and reconfirms the above-mentioned ranking in below 20:

20. Constraint ranking in stress patterns of SLWs

Stratum 1: WSP
HARM-C
Stratum 2: Trochee
FtBin
NonFin
Align-L
Stratum 3: Align-R
MAX-IO
DEP-IO
Parse- **σ**

4. Conclusion

Overall, the findings show that the stress is quantity-sensitive in Saraiki, and in terms of metrical theory, a foot is left-prominent (trochaic). The adaptation process is mainly phonological from the L1 perspective since the adaptation patterns (outputs) were not faithful to the source input. In terms of OT, this

suggests the dominance of markedness over faithfulness constraints to yield less marked structures to conform to the native phonology through the strategies employed to repair borrowed input are mainly insertion, deletion, vowel shortening, and substitution. The stress patterns of the loanword adaptation suggest that Saraiki loanword adaptation appears to be computed/analyzed by the phonological grammar of the native language and thus contributes to the phonological theory of loanword phonology. A significant phenomenon in this regard is that in insertion and deletion 'the principle of minimal violation of input' (the principle of economy) is considered by the speakers of Saraiki in adaptation of the loanwords. If insertion is required, only a consonant which already exists in the input is inserted. Similarly, if deletion is required in a word, only geminating consonants are deleted so that maximum of the input is protected in the adapted words.

It is important to further investigate loanwords with special focus on the existing and current theories of loanword acquisition with special emphasis on the empirical based theoretical framework and correlate it with adult second acquisition. These findings have special implications for students at religious schools in Pakistan. They may come across similar difficulties which are observed in common monolingual speakers of Saraiki in production of Arabic loanwords in their mother tongue.

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