Dialectologia 21 *(2018), 131-150.*
ISSN: 2013-2247

Received 11 January 2016.
Accepted 13 June 2016.

IRANIAN-BALOCHI DIALECTS LOANWORD PHONOLOGY: AN OPTIMALITY THEORETIC APPROACH

Bahareh SOOHANI & Seyed MEHDI SAMAEI

Leiden University * / Iranian Research Institute for Information Science and Technology*

b.soohani@umail.leidenuniv.nl / samai@irandic.ac.ir

Abstract

This paper aims to investigate how the loanwords phonologically are adapted in three Iranian-Baochi dialects (IBDs) namely Mirjaveh Sarhaddi Balochi (MSB), Sarawani Balochi (SB) and Lashari Balochi (LB). The analyses of these phonological adaptations will be given within the framework of Optimality Theory (OT), comparative tableau (Prince 200). The data have been collected during a research fieldwork in Sistan and Baluchistan provinces of Iran. The research findings demonstrate that in segmental adaptation, foreign inputs with fricatives *f, v, χ, ɣ* are adapted into IBDs as *p*, *w*, *h* or *k* and *k* or *g* respectively. Also vowel adaptation illustrates that diphthongization and vowel laxness are two common processes in vowel adaptation in IBDs. In addition phonotatic adaptation in IBDs shows that final word germination is observed in loanwords as well as original Balochi words; but there is also number of loans degemination in Sarhaddi and Lashari Balochi. Moreover these findings can be represented in OT by ranking the following constraints: FAITH-ROOT, FAITH-AFFIX, FAITH-μ, *Geminate.

Keywords

loanwords, Optimality Theory, constraints, segmental adaptation

* Leiden University, Dankmeijerpad 136, 2333BW, Leiden, the Netherlands / Iranian Research Institute for information science and Technology 1090, Enghelab Avenue, IRANDOC, Tehran, Iran.

©Universitat de Barcelona

FONOLOGIA DE LOS PRÉSTAMOS DIALECTALES EN BALUCHI IRANIANO:
UNA APROXIMACIÓN DESDE LA TEORÍA DE LA OPTIMIDAD

Resumen

Este artículo tiene como objetivo investigar cómo se adaptan fonológicamente los préstamos en tres dialectos baluchi iranianos (IBD), a saber, Mirjaveh Sarhaddi Balochi (MSB), Sarawani Balochi (SB) y Lashari Balochi (LB). Los análisis de estas adaptaciones fonológicas se darán en el marco de la Teoría de la Optimidad (TO) (Prince 200). Los datos se han recopilado durante un trabajo de campo de investigación en las provincias de Sistan y Baluchistan de Irán. Los resultados de la investigación demuestran que en la adaptación segmental, las préstamos extranjeras con las fricativas *f, v, χ, ɣ* se adaptan en IBD como *p, w, h o k y k o g*, respectivamente. También la adaptación vocálica ilustra que la diptongación y la laxitud vocal son dos procesos comunes en la adaptación de vocales en IBD. Además, la adaptación fonotáctica en IBD muestra que se oberva la germinación al final de la palabra en los préstamos y en las palabras originales de baluchi; pero también hay una cantidad de préstamos degeminados en el baluchi de Sarhaddi y de Lashari. Además, estos hallazgos se pueden representar en TO al clasificar las siguientes restricciones: FAITH-ROOT, FAITH-AFFIX, FAITH-μ, *Geminate.

Palabras clave

préstamos, Teoría de la Optimidad, restricciones, adaptación segmental

1. Introduction

Generally speaking, speakers borrow words from other languages to fill the gap in their own lexical inventory. Calabrese & Wetzels (2009) consider two different scenarios for nativization of loanwords based on available literature on loanword phonology:

(1) nativization-through-production: when word borrowing occurred by bilingual speaker that fills a gap in the recipient (L1) language by taking the word from other language that he knows namely donor language (L2). In this case it is assumed that the underlying representation of borrowed word stores in the L2 long-term memory storage for lexical item and the surface representation of the borrowed word follows the grammatical rules of L1.

(2) nativization-through-perception: when the speaker fills a gap in his language by borrowing the word from other languages that he knows a little or not at all, it is indeed loanword.

©Universitat de Barcelona

Balochi lexicon is marked by extensive loanwords (Korn 2005). The adaptation of loans from Old, Middle and New Persian, Kurdish, Urdu, Indic and other Indo-Iranian languages as well as English, Turkic and other Indo-European languages have been only described (cf. Korn 2005), but no theoretical phonological analysis provided on loanwords in Iranian Balochi dialects over the past years as far as the present authors know.

In the present study we will only focus on loanwords generated in nativization-through- production, since all most all Balochi speakers in Iran are bilinguals, they know Persian as a formal and educational language in Iran as well as Balochi as their mother tongue. The Optimality Theoretical analyses of our data will be given as well. In addition, our observations will be shown within Optimality Theory framework (henceforth OT), a theory of constraint interactions in grammar (Prince & Smolensky 1993, McCarthy & Prince 1993a, 1993b). Besides, the phonological analysis of Iranian-Balochi dialects will be shown based on comparative tableaux.

This paper proceeds as follows: §2 introduces the language background; §3 deals with the theoretical framework employed; §4 provides a description and an analysis of the linguistic data; and finally §5 represents the conclusion.

2. Language background

Balochi is spoken in south-western Pakistan, and by a large number of people in Karachi. It is also spoken in south-eastern Iran, in the province of Sistan and Baluchestan, and by Baloch who have settled in the north-eastern province of Khorasan and Golestan. It is, furthermore, spoken by small communities in Afghanistan, in the Gulf States, in the Marw/Marie region of Turkmenistan, in India, East Africa and today also by a considerable number of Balochi in North America, Europe and Australia (Jahani & Korn 2009).

Jahani & Korn (2009: 636) divide the main dialects of Balochi into Western, Southern, and Eastern. They declare this is a very broad dialect division, within which further dialect demarcations can be made. Some dialects do not easily fit any of these

©Universitat de Barcelona

groups. This is true, for example, of the dialect spoken in Iranian Sarawan, which shows transitional features between Western and Southern.

As mentioned in the introduction section, the present study focuses on loanword phonology of three Iranian Balochi dialects namely Sarhaddi Mrijaveh, Sarawani and Lashari. These three selected Iranian Balochi dialects are spoken, respectively, in Mirjaveh, Sarawan and Lashar in Sistan and Baluchestan province which is located in the southeast of Iran. It is worth mentioning that the Iranian Balochi dialects, are not only surrounded by Standard Persian, but also by some Persian dialects, such as the Sistani and Birjandi dialects, as well as some other languages such as Brahui, Bashkardi, Jadgali, Mazandarani, Qashqai and Kurdish (Okati 2012).

3. Theoretical considerations

At the heart of OT is the conflict between faithfulness constraints, which keep surface representations in line with the abstract phonological forms, and well-formedness constraints, which seek to keep surface realizations in line with cross-linguistic generalizations based on markedness. In other words, faithfulness constraints oppose changes, while markedness constraints trigger changes (Prince & Smolensky 1993, McCarthy & Prince 1993a, 1993b). This exemplifies the basic concept behind OT: all languages have the same constraints, all of which are violable. The output forms of the corresponding input depends on which constraints are the most important in a given language. Violations, as well as the optimal output, are represented visually through the use of a tableau.

Prince (2000) suggests a new version of representing elements in OT which is known as “comparative tableaux”. In this format, each candidate is a desired optimum or competes with a desired optimum which is, indeed, suboptimum as shown in the following tableau:

©Universitat de Barcelona

Tableau 1. Comparative tableau

	C_1	C_2	C_3
a. ☞ candidate (a)			*
b. candidate (b)		*W	L

As above tableau represents, the optimal candidate is candidate (a), so it is optimum candidate and candidate (b) is suboptimum candidate. *W* shows that the constraint ranking prefers the desired optimum candidate it prefers the Winner, in this case candidate (a) and *L* shows that the constraint ranking prefers the desired suboptimum candidate (it prefers the Loser, here we mean candidate (b)) and *blank* means constraint does not distinguish the candidates. In ranking theory, indeed each *W* must precede the *L* (Prince 2000: 3).

4. Loanword phonology in IBDs

In this section first the segmental adaptation (both consonants and vowels) in IBDs will be investigated and then phonotactic adaptation in these three dialects will be examined.

4.1 Segmental adaptation

When the loanword contains a non-native segment, the segment is replaced with the "closest" sound in the native language (Kang 2011). As it is shown in the following table, there is no labiodental and velar or uvular fricative in IBDs consonant inventory (except in the pronunciation of educated speakers), thus in this section, we examine how foreign inputs with fricatives *f, v, χ, ɣ* are adapted into IBDs.

©Universitat de Barcelona

Table 1. Consonant inventory of IBDs

	labial	alveodental	alveolar	postalveolar	retroflex	velar	uvular	glottal
plosive	p b	t d			ʈ ɖ	k g		ʔ
fricative			s z	ʃ ʒ				h
affricate				tʃ dʒ				
nasal	m		n					
Central approximant	w		r		ɻ	j		
Lateral approximant			l					

4.1.1 [f] and [v] adaptation in IBDs

The data in (1) illustrate the IBDs adaptation of two phonemes [f] and [v] which are replaced by [p] and [w] respectively, in addition there are two examples in Sarhaddi Balochi which /v/ appears as /b/ as in 1(ci, cii).

(1)	Non-Balochi words		IBDs adapted forms	
a.i		*felfel*	[pelpel]	‘pepper’
a.ii		*fa:l*	[pɑːl]	‘omen’
a.iii		*film*	[pilm]	‘film’
a.iv		*futba:l*	[putbɑːl]	‘football’
a.v		*telefon*	[telepon]	‘telephone’
a.vi		*fekr*	[pegr]	‘thought’
b.i		/væɣt/	[wæht]	‘time’
b.ii		/væhʃi/	[wæhʃi]	‘wild’
b.iii		/livɑːn/	[liwɑːn]	‘glass’
c.i		/vɑsəleːn/	[bɑːsliːn]	‘vaseline’
c.ii		/teləvizhən/	[telibzon]	‘television’

©Universitat de Barcelona

Dialectologia 21 *(2018), 131-150.*
ISSN: 2013-2247

4.1.2 [ɣ] and [χ] adaptatios in IBDs

Data (2) examines the substitution of phoneme /χ/ in IBDs. Indeed there is a dialect variation in adaptation of loanwords with phoneme /χ/. While in Sarawani and Lashari Balochi dialects it is mostly replaced by /h/ and in a few examples by /k/, but in Sarhaddi Balochi dialects there are examples in which original form of loanwords are preserved, thus it can show that the influence of Persian on Sarhaddi Balochi is more than other two dialects, since it is located closer to Zahedan (center of Sistan and Balochestan Province).

(2)	Non-Balochi words		Sarawani/Lashari adapted forms		Sarhaddi adapted forms	
a.i	*χuːn*		[huːn]	[huən]	[huen]	‘blood’
a.ii	*χaːs*		[hɑːs]		[hɑːs]	‘special’
a.iii	*nɑːχon*		[nɑːhon]	[pintʃ]	[nɑːhon]	‘nail’
a.iv	*χaːm*		[hɑːm]		[hɑːm]	‘raw’
a.v	*χuːg*		[huːk]		[huːk]	‘pig’
a.vi	*χaːk*		[hɑːk]		[hɑːk]	‘dust’
a.vii	*χær*		[hær]		[hær]	‘donkey’
a.viii	*miːχ*		[mɪːh]	[miəh]	[mieh]	‘nail’
b.i	*tæχt*		[tæht]		[tæχt]	‘bed’
b.ii	*χeʃt*		[heʃt]		[χeʃt]	‘brick’
b.iii	*χæjjat*		[hæjɑːt]		[χæjɑːt]	‘tailor’
b.iv	*χers*		[hers]		[χers]	‘bear’
b.v	*χijabaːn*		[hæjɑbɑːn]		[χæjɑbɑːn]	‘street’
b.vi	*χaːmuːʃ*		[h ɑːmuːʃ]	[hɑːmuəʃ]	[χɑːmueʃ]	‘off, silent’
c.i	*χærug*		[hærgoʃk]	[kærgoʃk]	[kærgoʃk]	‘rabbit’
c.ii	*χroːs*		[kruːs]	[kruəs]	[krues]	‘cock’

©Universitat de Barcelona

In data 2(a), all three dialects apply the same strategy to adapt the phoneme /χ/: it is replaced by /h/, indeed it is the commonest substitution. While in 2(b), Sarawani and Lashari Balochi keep replacing /χ/ by /h/, but in Sarhaddi Balochi the origin form of loanwords almost preserved. For instance in (b.v) and (b.vi), only vowel adaptation occurred but not uvular substitution. Finally in data 2(c) phoneme /χ/ appears as /k/.

Data (3) illustrates that in some examples phoneme /ɣ/ is replaced /g/ and in most other cases it is pronounced as /k/. Also in two Sarhaddi Balochi examples, /ɣ/ is replaced by /χ/. Besides, as it is shown in (d.i) /ɣ/ is replaced by /h/ in Sarawani and Lashari dialects.

(3)	Non-Balochi words	Sarawani /Lashari adapted forms	Sarhaddi adapted forms	
a.i	*kælɑːɣ*	[kælɑːg]	[kælɑːg]	‘crow’
a.ii	*kɑːɣæz*	[kɑːgæd]	[kɑːgæd]	‘paper’
a.iii	dɑːɣ	[dɑːg]	[dɑːg]	‘hot’
a.iv	*bɑːɣ*	[bɑːg]	[bɑːg]	‘garden’
a.v	*porteɣɑːl*	[portægɑːl]	[portægɑːl]	‘orange’
a.vi	*ɣol*ɑː*m*	[golɑːm]	[golɑːm]	‘waiter’
b.i	*ʔeʃɣ*	[ʔeʃk]	[ʔeʃk]	‘love’
b.ii	*ʔɑːʃeɣ*	[ʔɑːʃek]	[ʔɑːʃek]	‘lover’
b.iii	*ʔæɣl*	[ʔækl]	[ʔækl]	‘wisdom’
b.iv	*ɣæbr*	[kæbr]	[kæbr]	‘grave’
b.v	*ɣorʔɑːn*	[korʔɑːn]	[korʔɑːn]	‘Koran’
b.vi	*ɣɑːʃoɣ*	[kɑːʃok]	[ɣɑːʃok]	‘spoon’
c.i	*ræɣs*	[nɑːtʃ]	[ræχ s]	‘dance’
c.ii	*ʃoluɣ*	[ʃolok]	[ʃoloχ]	‘crowded’
d.i	*væɣt*	[wæht]	[wæχ]	‘time’

In addition to the cases discussed already, the following vowel quality changes occur in loanwords.

©Universitat de Barcelona

Dialectologia 21 *(2018), 131-150.*
ISSN: 2013-2247

4.1.3 Diphthongization

The bimoraic high front vowel /iː/ is replaced by /ie/ in Sarhaddi Balochi and /iə/ in Lashari Balochi as in following data:

(4)	Non-Balochi words		Sarhaddi adapted forms	Lashari adapted forms	
a.i	*miːz*		[miez]	[miəz]	‘table’
a.ii	*niːm*		[niem]	[niəm]	‘half’
a.iii	*diːg*		[dieg]	[diəg]	‘pot’
a.iv	*miːχ*		[mieh]	[miəh]	‘pin’
a.v	*piːtʃ*		[pietʃ]	[piətʃ]	‘twist’
a.vi	*kiːf*		[kiep]	[kiəp]	‘bag’
a.vii	*siːr*		[sier]	[siər]	‘full’

Moreover, the bimoraic back vowel /uː/ appears as diphthong /ue/ in Sarhaddi Balochi and /uə/ in Lashari Balochi as in data (5).

(5)	Non-Balochi words		Sarhaddi adapted forms	Lashari adapted forms	
a.i	*χuːn*		[huen]	[huən]	‘blood’
a.ii	*puːst*		[puest]	[puəst]	‘skin’
a.iii	*tuːp*		[tuep]	[tuəp]	‘ball’
a.iv	*ʃuːr*		[ʃuer]	[ʃuər]	‘salty’
a.v	*ruːd*		[rued]	[ruəd]	‘river’
a.vi	*muːr*		[muer]	[muər]	‘ant’

Furthermore, long back vowel /oː/ is replaced by diphthong /ou/ in Sarawani Balochi as in following data:

(6)	Non-Balochi words		Sarawani adapted forms	
a.i	*hoːz*		[houz]	‘pool’
a.ii	*foːn*		[poun]	‘telephone’
a.iii	*moːt*		[mout]	‘death’

©Universitat de Barcelona

4.1.4 Vowel laxness in Sarawani Balochi adapted forms

In Sarawani Balochi loan adaptations, the bimoraic high tense front vowel /iː/ and bimoraic high tense back vowel /uː/ are replaced by monomoraic lax vowel /ɪ/ and /ʊ/ respectively as in following data:

(7)	Non-Balochi words		Sarawani adapted forms	
a.i	*di*ːg		[dɪg]	'pot'
a.ii	*di*ː*r*		[dɪr]	'late'
a.iii	*ki*ː*f*		[kɪp]	'bag'
a.iv	*bi*ː*χ*		[biːh]	'root'
b.i	g*u*ː*r*		[gʊr]	'grave'
b.ii	*ʃu*ː*r*		[ʃʊr]	'salty'
b.iii	*du*ː*ɣ*		[dʊg]	'soft drink'
b.iv	*tu*ː*r*		[tʊr]	'net'

4.1.5 Final vowel lowering

In IBDs data, word-final mid front vowel appears as front low vowel as in (8):

(8)	Non-Balochi words	IBDs adapted forms	
a.i	*mædrese*	[mædresæ]	'school'
a.ii	*sofre*	[sobræ]	'table cloth'
a.iii	*nɑ*ː*me*	[nɑːmæ]	'letter'
a.iv	*fɑ*ː*teme*	[pɑːtomæ]	'Fateme'

In sum, for dealing with an accurate analysis of segment adaptation in IBDs, a diachronic investigations and explanations are needed, since the loanwords are indeed integrated loanwords in IBDs, it means they have entered the lexicon of Balochi. Moreover, only diachronic interpretation makes it clear that how those speakers, who

©Universitat de Barcelona

originally introduced the loans, applied adaptations (Calabrese 2009: 66). Whereas the present study is based on synchronic phonological knowledge of IBDs, the more diachronic study will be left for the future researches.

4.2 Phonotactic adaptation

Just like in the case of word-final germination in original Balochi words (see for example Soohani, Ahangar & van Oostendorp 2014), there is also number of cases of germination in loan words (Korn 2005: 271), both sonorant and obstruent consonants can be geminated in word-final position as shown in following examples:

(9)	Non-Balochi words		IBDs adaptation forms	
a.i	*læb*		[læbb]	‘bride-price’
a.ii	*buːt*		[buʈʈ]	‘boot
a.iii	*kæm*		[kæmm]	‘little’
a.iv	*mætʃ*		[mæʈʈ]	‘match’

While germination is a common phonological process in Balochi, there is also number of loans degemination in Sarhaddi and Lashari Balochi as in (10).

(10)	Non-Balochi words		Sarhaddi/ Lashari adaptation forms	
a.i	*χæjjɑːt*		[hæjɑːt]	‘tailor’
a.ii	*ʔævvæl*		[ʔæwæl]	‘first’
a.iii	*dovvom*		[doʔom] (Sarhaddi)	‘second’
			[dojom] (Lashari)	‘second’
a.iv	*sevvom*		[seʔom] (Sarhaddi)	‘third’
			[sejom] (Lashari)	‘third’

As data (10) demonstrate, glide geminate in intervocalic position is not allowed in Sarhaddi and Lashari Balochi, where as it is permitted in Sarawani Balochi. Example (a.i) can be an example of compensatory lengthening; the short back vowel/ɑ/ becomes long

©Universitat de Barcelona

to preserve the syllable weight. However, in other three examples there is no vowel lengthening.

5. IBDs loans adaptation in optimality theory

In order to establish the set of rankings for IBDs adaptation of fricatives as in data (3)-(5) mentioned in § 4.1.1, § 4.1.2, the relevant constraints are listed in (11) and (12) as below:

(11) List of markedness constraints for IBDs fricatives and coronal stops adaptation

a.i [f]*
/f/ is not allowed in Balochi adaptation forms.

a.ii [v]*
/v/ is not allowed in Balochi adaptation forms.

a.iii [χ]*
/χ/ is not allowed in Balochi adaptation forms.

a.iv [ɣ]*
/ɣ/ is not allowed in Balochi adaptation forms.

Besides all above constraints listed in (11), the famous faithfulness constraints MAX-C and IDENT-IO (Kager 1999) are required in our OT analysis of consonant adaptations in IBDs. The following rankings deal with IBDs adaptation of fricatives and coronal stops. The markedness constraint is outranked all faithfulness constraints to prevent optimal candidate without segment adaptations.

(12) Constraint rankings for consonant adaptations in IBDs

a.i [f]*, MAX-C >> IDENT- IO [f]

a.ii [v]*, MAX-C >> IDENT- IO [v]

©Universitat de Barcelona

a.iii [ɣ] *, MAX-C >> IDENT- IO [ɣ]

a.iv [χ]*, MAX-C >> IDENT-IO [χ]

Following tableaux represents the rankings in (12). In all tableaux the optimal candidate is (a), since it satisfies all higher ranked constraints, while other candidates have at least one fatal violation. So tableaux (13)-(16) evaluate the optimal candidate for following inputs:

/fekr/, /væqt/, /ɣɑ:ʃoɣ/, /χær/.

(13) IBDs production of word *fekr*

Input:/ fekr/	[f]*	MAX-C	IDENT- IO [f]
a. ☞ pekr			*
b. fekr	*W		L
c. ekr		*W	

(14) IBDs production of word *væqt*

Input:/væɣt/	* [v]	*[q]	IDENT-IO (v)	IDENT-IO [q]
a.☞ wæht			*	*
b. væɣt	*W	*W	L	L
c. væɣt	*W		L	*
d. wæɣt		*W	L	*

(15) IBDs production of word ɣɑ:ʃoɣ

Input: /ɣɑ:ʃoɣ/	* [ɣ]	MAX-C	IDENT-IO [ɣ]
a.☞ kɑ:ʃok			*
b. ɣɑ:ʃoɣ	*W		L
c. kɑ:ʃo		*W	*

©Universitat de Barcelona

(16) IBDs production of word *χær*

Input: /χær/	*[χ]	MAX-C	IDENT-IO [χ]
a.☞ hær			*
b. χær	*W		L
c. ær		*W	*

The second part of segment adaptation in IBDs deals with vowel adaptations, as illustrated in data (6) and (7) mentioned in § 4.1.3 above, in Sarhaddi Balochi and Lashari Balochi dialects front vowel /i:/ and back vowel /u:/ appear as /ie/, /iə/ and /ue/, /uə/ respectively. Thus the number of input and output moras is preserved. The constraints needed to make an OT analysis for this phenomenon are as follows:

(17) List of constrains deal with diphthongization in Sarhaddi Balochi and Lashari Balochi

a.i [i:]*
/i:/ is not allowed in Balochi adaptation forms

a.ii [u:]*
/u:/ is not allowed in Balochi adaptation forms.

a.iii MAX-μ -IO
Input moras have output correspondence.

Besides, faithfulness constraint IDEN-IO is required in our ranking as in (18).

(18) Constraint rankings for Sarhaddi and Lashari diphthongization

a.i [i:]*, MAX-μ-IO >> IDENT-IO [i:]

a.ii [u:]*, MAX-μ-IO >> IDENT-IO [u:]

Tableaux (19) and (20) represent above rankings for input /di:ɡ/ and /ʃu:r/.

©Universitat de Barcelona

(19) Sarhaddi Balochi production of word *di*:g

Input:/ di:g/	[i:]*	MAX-µ-IO	IDENT-IO[i:]
a.☞ dieg			*
b. di:g	*W		L
c. dig		*W	*

Moreover, vowel laxness in Sarawani Balochi observed in loans adaptations as in data (7) mentioned inn § 4.1.4 above. Faithfulness constraint IDENT- IO and other relevant constraints which are listed in (19) deal with this process.

(20) List of constraints for vowel laxness in Sarawani Balochi loans adaptation

a.i *[+tense]

Tense vowels are not allowed in Sarawani Balochi adapted forms.

a.i * [i:]

/i:/ is not allowed in Sarawani Balochi adaptation forms.

a.ii * [u:]

/u:/ is not allowed in Sarawani Balochi adaptation forms.

a.iii MAX- µ-IO

Input moras have output correspondence.

The result rankings for constraints in (20) illustrated in (21):

(21) Constraint rankings for vowel laxing in Sarawani Balochi

a.i * [i:], *[+tense] >> MAX-µ- IO, IDENT-IO [i:]

a.ii *[u:], *[+tense] >> MAX-µ- IO, IDENT- IO [u:]

Tableaux (22) and (23) evaluate the rankings for input /ʃiːr/ and /guːr/. The winner candidate in both tableaux is candidate (a), it satisfies the outranked constraints, but

©Universitat de Barcelona

violates the lower ranked constants which are not fatal; however two other candidates violate higher ranked constraints, so they are eliminated.

(22) Sarawani Balochi perception of word *di*ː*g*

Input:/diːg/	*[iː]	*[+tense]	MAX-µ-IO	IDENT-IO[iː]
a.☞ dɪg			*	*
b. diːg	*W	*W	L	L
c. dig		*W	*	L

(23) Sarawani Balochi production of word *gu*ː*r*

Input:/guːr/	*[uː]	*[+tense]	MAX-µ-IO	IDENT-IO[uː]
a. ☞ gʊr			*	*
b. guːr	*W	*W	L	L
c. gur		*W	*	L

Final vowel lowering is the other phonological process in loans adaptations in IBDs. As data (10), which mentioned in §4.2 above, demonstrate final mid front vowel in an open syllable appears as close front vowel in IBDs adaptation forms, in other word final tense vowel in an open syllable seems to be not allowed in thee three Balochi dialects.

The contextual markedness constraint which militates against occurring /e/ in word final position is *e#]$_w$. It outranks a context–free faithfulness constraint and MAX-V and IDENT-IO (tense).

The resulting ranking of these three constraints is:

(24) *#e]$_w$ >> MAX-V >>IDENT-IO (tense)

©Universitat de Barcelona

(25) IBDs production of word *mædrese*

Input: /mædrese/	*e#]$_w$	MAX- V	IDENT-IO (tense)
a. ☞ mædresæ			*
b. mædrese	*W		L
c. mædres		*W	L

In tableau (25), candidate (a) is a winner candidate, it satisfies higher ranked constraint *e#]$_w$. Candidate (b) is a loser since it militates against the higher ranked constraint. Candidate (c) satisfies *e#]$_w$, but it has fatal violation, so it is eliminated as well.

Now to do an OT analysis of two phonotactic adaptations namely gemination and degemination, following constraint are needed:

(26) List of constraints for word-final consonant geminate in IBDs adapted forms

a.i *C#] $_w$
No short consonant in word-final position in Balochi adapted forms.

a.ii *GEM
'No geminates'
(Rose 2000)

a.iii FAITHμ
No mora deletion or insertion'
(Davis 2003)

In addition to above constraints, the famous DEP-IO context-free faithfulness constraint is involved in our ranking as in (27) for input *kæm*.

(27) *C#]$_w$ >> FAITHμ >> DEP-IO, *GEM

©Universitat de Barcelona

Tableau (28) represents the above ranking. As it is shown the optimal candidate is (a). It satisfies the outranked constraint, but violates the lower ranked constraints which are not count as fatal violations in this case. Candidate (b) and (c) both militate against the higher ranked constraint which is against short consonant in coda position namely *C#]$_w$, so they are eliminated.

(28) IBDs production of word *kæm*

Input: /kæm/	*C#]$_w$	FAITH-µ	DEP-IO	*GEM
a. ☞ kæmm		*	*	*
b. kæm	*W	L	L	L
d. kæːm	*W	*W	*W	L

The context-free markedness constraint *GEMGLIDE deals with the degemination in loanword adaptation process in IBDs. Indeed, it outranks other relevant constraints as in (29) for input ʔæ*vvæl*.

(29) *GEMGLIDE, No [V]>> FAITHµ, MAX-IO, IDENT-IO [V]

Tableau (30) evaluated the optimal candidate for input ʔæ*vvæl*. candidate (a) is a winner, it degeminates the intervocalic long consonant and also labiodental fricative consonant is replaced by glide, so both higher ranked constraints *GEMGLIDE and No[v] are satisfied. Candidate (b), violates the anti-glide geminate constraint *GEMGLIDE, so it is eliminated. Candidate (c) and (d) preserve the labiodental fricative which is militates against the higher ranked constraint No[v], thus they are losers as well.

(30) IBDs production of word ʔæ*vvæl*

Input:/ʔævvæl/	*GEMGLIDE	*[v]	FAITHµ	MAX- C	IDENT-IO [v]
a.☞ ʔæwæl			*	*	*
b. ʔæwwæl	*W		L	L	**
c. ʔævvæl		**W	L	L	L
d. ʔævæl		*W	*	*	L

©Universitat de Barcelona

6. Conclusion

The findings presented here imply that in the phonological system of Balochi dialects, we can find the most microvariation in the domain of loanword adaptation more specifically segmental (consonant and vowel) adaptation. As it has been discussed already, different Balochi dialects have their own strategies of adapting loanwords. Data 3-9 show the microvariation in Balochi dialects in adapting loanwords. For example Sarawani and Lashari Balochi adapt fricative consonant, namely /χ/ as /h/, while Sarhaddi Balochi speakers mostly pronounce borrowing words with /χ/ as original form. Therefore preserving the original forms of borrowing words in Mirjaveh Sarhaddi Balochi can be seen as the case of a language contact. Sistan and Baluchestan province like other provinces in Iran has Persian as an official language. Balochi, Barahui, Kurdish are also spoken in different areas of the province with no official role. Persian has a number of dialects itself, among which is Sistani. Sistani is spoken mostly in Sistan region in Sistan and Baluchestan. Geographically speaking, Mirjaveh Sarhaddi is spoken in the area (Mirjaveh) which is located closer to the center of province, where has more Persian speakers. So MSB is highly influenced by Persian. Moreover, based on our data phonotactic adaptation in IBDs illustrates that both germination (in all three dialects) and degemination (in Lashari and Sarhaddi dialects) processes are common in Balochi loanword phonology.

Furthermore; the analyses of IBDs phonological adaptations within the frame work of Optimality Theory show that in all tableaux, relevant markedness constraints like *C#]$_{w}$, *[+tense] out ranked faithfulness constraints such as DEP-IO, MAX- IO.

References

CALABRESE, A. (2009) “Perception, production and acoustic inputs in loanword phonology”, in A. Calabrese & W. L. Wetzels (eds.), *Loan phonology*, Amsterdam/Philadelphia: John Benjamins, 59-115.

©Universitat de Barcelona

CALABRESE, A. & W. L. WETZELS (2009) "Loan phonology: Issues and controversies", in A. Calabrese & W. L. Wetzels (eds.), *Loan phonology*, Amsterdam/Philadelphia: John Benjamins, 1-11.

DAVIS, S. (2003) "The controversy over geminates and syllable weight", in C. Féry & R. van de Vijver (eds.), *The Syllable in Optimality Theory*, Cambridge: Cambridge University Press, 77-99.

JAHANI, C. & A. KORN (2009) "Balochi", in G. Windfuhr (ed.), *Iranian languages,* London, New York: Routledge, 634-692.

KAGER, R. (1999) *Optimality Theory,* UK: Blackwell.

KANG, Y. (2011) "Loan phonology", in M. van Oostendorp, K. J. Ewen, E. Hume & K. Rice (eds.), *Companion to Phonology*, *The phonological interfaces,* IV, New York: Wiley-Blackwell, 2258-2283.

KORN, A. (2005) *Towards a Historical Grammar of Balochi*, Wiesbaden: Reichert.

MCCARTHY J. & A. PRINCE (1993a) "Generalized Alignment", in G. E. Booij & J. van Marle (eds.), *Yearbook of Morphology*, Dordrecht: Kluwer, 79-153.

MCCARTHY J. & A. PRINCE (1993b) "Two lectures on prosodic morphology". Handouts of two lectures at OTS/HIL workshop on Prosodic Morphology, Utrecht University, July 1994, [ROA-59, http://ruccs.rutgers.edu/roa.html].

OKATI, F. (2012) *The vowel systems of five Iranian Balochi dialects*, Studia Iranica Upsaliensia, 13, Uppsala: Acta Universitatis Uppsaliensis.

PRINCE, A. & P. SMOLENSKY (1993) "Optimality Theory: constraint interaction in generative grammar", Ms., Rutgers University, New Brunswick and University of Colorado, Boulder. [To appear as Technical report no. 2, Rutgers University Center for Cognitive Science. Cambridge, Mass.: MIT Press.]

PRINCE, A. (2000) "Comparative Tableaux", New Brunswick: Rutgers University.

ROSE, Sh. (2000) "Rethinking geminates, long-distance geminates, and OCP", *Linguistic Inquiry*, 31, 85-122.

©Universitat de Barcelona