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REDUPLICATION WITH FIXED SEGMENTISM IN CENTRAL SARAWANI BALOCHI

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Abstract

The Central Sarawani dialect of Balochi (Indo-European, Iran), has a number of reduplicative patterns. One of these is an augmentative pattern that we will refer to as '*m*/*p*-reduplication' and which instantiates an example of 'morphological fixed segmentism' in the sense of Alderete et al. (1999). The present study examines this type of reduplication in Sarawani Balochi based on Optimality Theory (OT). The linguistic corpus relies on an original fieldwork through the purposeful recording of speech gathered through interview with 10 male and female language consultants with different social backgrounds. The research findings show that this type of augmentative reduplication can be represented by ranking the following constraints: OCP, FAITH-AFFIX, MAX-BR, *ONS/N, IDENT-BR (lab), and VOP. More interestingly, however, this segment is not completely fixed: in most cases it is *m*, but this is not true when the stem itself contains *m*, it is *p* instead.

Keywords

augmentative reduplication, fixed segmentism, optimality theory, constraints, onset sonority hierarchy

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REDUPLICACIÓN CON SEGMENTISMO FIJO

EN SARAWANI BALOCHI CENTRAL

Resumen

El dialecto Sarawani Balochi central (Indoeuropeo, Irán), tiene una serie de patrones reduplicativos. Uno de ellos es un patrón aumentativo al cual nos referiremos como 'm/p-reduplicación', y que crea un ejemplo de 'segmentismo morfológico fijo' en el sentido de Alderete *et al.* (1999). El presente estudio examina este tipo de reduplicación en Sarawani Balochi basándose en la Teoría de Optimidad (TO). El corpus lingüístico se basa en un trabajo de campo original a través de la grabación expresa del habla obtenida a través de entrevistas a 10 informadores hombres y mujeres de distintos orígenes sociales. Los resultados de la investigación muestran que este tipo de reduplicación aumentativa puede representarse mediante la clasificación de las siguientes restricciones: OCP, FAITH-AFFIX, MAX-BR, *ONS/N, IDENT-BR (lab), y VOP. Curiosamente, sin embargo, este segmento no es completamente fijo: en la mayoría de los casos es *m*, pero esto no es cierto cuando la raíz en sí contiene *m*, entonces es *p*.

Palabras clave

reduplicación aumentativa, segmentismo fijo, teoría de optimidad, restricciones, jerarquía de la sonicidad inicial

1. Introduction

Augmentative reduplication with fixed segmentism requires copying of the base elements coupled with introducing a fixed segment. The added segment is an affix that is realized simultaneously with the reduplicative copy, and overwrites a portion of the reduplicant (McCarthy & Prince 1986, 1990).

Augmentative reduplication with fixed segmentism in Central Sarawani Balochi (henceforth CSB), as in other languages with this phenomenon, among various reduplicative patterns (cf. Moradi 2012), is an example of rhyming patterns. We refer to this kind of reduplication in CSB as *m*/*p*- reduplication, which illustrates the most productive type of reduplication in this dialect:

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(1) *m*/*p*- Reduplication

Base		Reduplicative form	
a. *bætʃæk*	'boy'	*bætʃækmætʃæk*	'boy and so forth'
b. *gʊk*	'cow'	*gʊkmʊk*	'cow and the like'
c. *mu*ː*d*	'table'	*mu*ː*dpu*ː*d*	'hair and the like'

In the present article, our analysis will be based on Optimality Theory, a theory of constraint interactions in grammar (Prince & Smolensky 1993, McCarthy & Prince 1993a, b). In our OT analysis, we will show that '*m*/*p*-augmentative reduplication' is an example of melodic over-writing (McCarthy & Prince 1986, 1990) and Alderete *et al.* (1999) as 'Morphological type of fixed segmentism'.

This article 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 Baloch in North America, Europe and Australia (Jahani & Korn 2009). The number of Balochi speakers is estimated between 5- 8 million (Jahani 2001: 59)

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

The dialect of Sarawani Balochi is spoken in the valley from Zangiyan, Dezzak, the central town of Sarawan (including Shastun, Sarjo and Bakhshan) up to Hoshshak, Gosht, Jalk, Kallagan, Naug as well as in Paskoh and Seb in the Soran valley and past the Siyahan mountain range but not in the rest of Soran approximately the same dialect is spoken. This dialect is called Central Sarawani by Baranzehi (2003). Dehwar with its surrounding areas and almost the whole Soran Valley except for Paskoh and Seb can be classified as another dialect; this dialect is called Sorani/Dehwari (Baranzehi 2003).

3. Theoretical considerations

3.1 Basic concepts of Optimality Theory

The central idea of OT is that surface forms of language reflect resolutions of conflicts between competing demands or constraints. A surface form is 'optimal' in the sense that it incurs the least serious violations of a set of violable constraints, ranked in a language-specific hierarchy. Constraints are universal and violable, and directly encode markedness statements and principles enforcing the presentation of constraints. A language differs in the ranking of constraints, giving priorities of some constraints over others. In fact, the optimal output form arises from competition of markedness and faithfulness constraints. Faithfulness constraints require that output be the same as their lexical input, in other words, faithfulness constraints oppose changes, while markedness constraints trigger changes (Prince & Smolensky 1993, McCarthy & Prince 1993a, b). In addition, 'faithfulness constraints state their requirements about input-output relations in term of correspondence' (Kager 1999: 194).

Reduplication is a phenomenon which involves phonological identity between the 'reduplicant' and the 'base' (Kager 1999: 194). McCarthy & Prince (1994) give the definition of 'base' and 'reduplicant' as paraphrased in Kager (1999: 202):

(2) 'The 'reduplicant' is the string of segments that is the phonological realization of some reduplicative morpheme RED, which is phonologically empty.
The 'base' is the output string of segments to which the reduplicant is attached, more specifically:

- For reduplicative prefixes, it is the following string of segments.
- For reduplicative suffixes, the preceding string of segments.'

3.2 Fixed Segmentism

Reduplication refers to a word formation process that can result in an identical copy of the base, or not (Urbanczyk 2007: 474). In addition to being composed of segments from the base, reduplication can also contain fixed segments. Following the work of McCarthy & Prince (1986, 1990), Alderete *et al.* (1999) argue that there are two distinctive types of reduplication with fixed segmentism: default segmentism and melodic overwriting. In the former a default segment is phonologically motivated and it is generally the least marked and also frequently the epenthetic segment of a language.

On the other hand, following McCarthy & Prince (1986, 1990), Yip (1992) and Alderete *et al.* (1999) have discussed that the overwriting string is an affixial morpheme which is relatively marked segments that replace segments from the base, as with the *schm*-reduplication pattern in English: *table-schmable*. Moreover, Alderete *et al*. (1999: 357) illustrate the properties of morphological fixed segmentism based on affixation as follows:

a) Faithfulness: fixed segments may form marked structure and be in contrast with other fixed segments.

b) Alignment: fixed segments may be left-aligned, right-aligned or infixed.

c) Context-sensitivity: fixed segments may alternate by suppletion or allomorphy.

In what follows we shall analyze the *m/p*-reduplication in CSB with a constrain-based approach as well as the theory suggested by Alderete *et al.* (1999).

4. Analysis of *m*/*p* – Reduplication in CSB

Display (4) provides examples of the augmentative reduplication forms in CSB, which highlights frequency, size or intensity. In CSB, the overwriting morpheme is generally *m*-this overwriting morpheme can, however, alternate by suppletion or allomorphy just like other affixes. So CSB selects the alternant *p*- when the word already starts with *m*- , like the forms in (4b):

(4) *m* /*p*- augmentative Reduplication

	Base		Reduplicative form	
a.	*ʧokk*	'child'	*ʧokkmokk*	'child and so forth'
	kotʃæk	'dog'	*kotʃækmotʃæk*	'dog and so forth'
	gʊk	'cow'	*gʊkmʊk*	'cow and so forth'
	kæt	'room'	*kætmæt*	'book and the like'
	lehip	'blanket'	*lehipmehip*	'blanket and the like'
	potʃtʃ	'cloth'	*potʃtʃmotʃtʃ*	'cloth and the like'
b.	*moʃk*	'mouse'	*moʃkpoʃk*	'mouse and so forth'
	mʊr	'ant'	*mʊrpʊr*	'ant and the like'
	mu:*d*	'hair	*mu*:*dpu*:*d*	'hair and so forth'

As data in (4a-b) show the overwriting morpheme contain *m*- or *p*- as a prefix. Moreover; the reduplicant is a suffix. Within OT, Generalized Alignment (McCarthy & Prince 1993a, cited in Ussishkin 2007: 458) provides a framework for analyzing morpheme position. So, the following two constraints inflict alignment restrictions on the affixal morpheme and the reduplicant respectively:

(5) ALIGN-L (*m*/*p*-, RED)

The left edge of *m*/*p*- is aligned to the left edge of a reduplicant.

(6) ALIGN-R (RED, BASE)

The right edge of reduplicant is aligned to the right edge of a base.

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Based on our explanations given so far, it is clear that the prefix m/p- precedence over the reduplicant, in other words, it affects the reduplicant and not the base. Therefore, the presence of an overwriting morpheme indicates that faithfulness to overwriting morpheme has taken precedence, through ranking, over base-reduplicant (BR) faithfulness constraint. A constraint forcing the realization of affix material known as FAITH-AFFIX (Ussishkin 2007: 467).

(7) FAITH-AFFIX

Every morpheme in the input has to show up in the output.

(8) MAX-BR

Every element of Base has a correspondent in Reduplicant.

('No partial reduplication')

(9) MAX-IO

Input segment must have output correspondence

(No deletion)

Tableau (1) shows the effect of high-ranking FAITH-AFFIX in forming the *m*-reduplicant form from the base like in *gʊkmʊk* 'cow and the like'.

/gʊk-RED-m/	FAITH-AFFIX	MAX-IO	MAX-BR	ALIGN-L(*m*-,RED)	ALIGN-R(RED, BASE)
a. gʊk-gʊk	* !	*		*	
☞ b. gʊk-mʊk			* !		
c. mʊk-gʊk		*!	*		*
d. mʊk-mʊk		*!		*	

Tableau (1)

Forming *m*-reduplicant from the base

FAITH-AFFIX>> MAX-IO>> MAX-BR>>ALIGN-L (*m*-, RED), ALIGN-R (RED, BASE)

The optimal candidate [gʊk-mʊk], incurs a violation of MAX-BR while it satisfies other constraints. A candidate such as *mʊk-gʊk*, which faithfully realizes the input affix *m*-, is eliminated due to its violation of MAX-IO and MAX-BR, which are against deletion

and this candidate does not achieve perfect alignment of the base to the right edge as well.

In the case of *p*-reduplication in examples (4b), *p*- is an alternation of overwriting affix when the word already starts with *m*-. Therefore; the output like *mu:d-mmu:d* is ungrammatical, since it violates the Obligatory Contour Principle (OCP). But, why is *p*- an alternate affix and not other segments like *b*- or even *t*- (since coronals are universally less marked)? To find an answer for this kind of question and to make an analysis for *p*-reduplication in CSB based on OT, we should introduce the concept of Sonority Sequencing Generalization (SSG) based on Zec (2007).

Zec (2007: 187) states the Sonority Sequencing Generalization based on Selkirk (1984: 116) as the following statement:

(10) *'Sonority Sequencing Generalization (SSG*)

For every pair of segments *s* and *z* in a syllable, *s* is less sonorous than *z* if

a) (i) *s* < *z*< Nucleus

or (ii) Nucleus > *z* > *s*

or b) (i) *s* < *z* and *z* is the nucleus

or (ii) *z* > *s* and *z* is the nucleus'

Moreover; some restrictions may impose on the rise or fall in sonority that go beyond the minimal requirements of SSG by constraints on sonority distance, Prince & Smolensly's (2004) natural hierarchy of margins is based on these constraints on sonority distance. The best margins are obstruent followed by nasal and liquids. The hierarchy of onsets based on Prince & Smolensky (1993) is as follows (as cited in Zec, 2007: 188):

(11) *ONS/L >> *ONS/N >> *ONS/O

This hierarchy illustrates that the preference for onset is the lowest sonorous segments, so the least marked onsets are obstruent, and the most marked onsets are liquids.

In addition, the unmarked value for the feature [voice] in obstruent is [-voice], as stated in Voice Obstruent Prohibition (Kager 1999: 40), which is accompanied with the other two constraints relevant to the *p*-reduplication pattern.

Now, it will be clear that why the optimal reduplicant candidate for the input like *mu*:*d* in CSB is *mu*:*dpu*:*d*. First, as Prince & Smolensky's (2004) hierarchy of onset yields, an obstruent is the least marked segment, and [-voice] is the unmarked value in obstruent. Second, the presence of an alternation overwriting affix *p*- indicates that labiality faithfulness constraint needs to be in our constraint ranking. In sum, the following relevant constraints should be considered for *p*-reduplication based on OT:

(12) OCP

At the melodic level, adjacent identical elements are prohibited.

(13) *ONS/N

Word-initial syllables may not begin with nasal.

(14) VOP

*[+ voice, -son]

No obstruent must be voiced.

(15) IDENT-BR (lab)

Correspondent onsets are identical in their specification for bilabiality.

The FAITH-AFFIX and MAX-BR as stated earlier are accompanied with the other four constraints introduced above, are ranked in the following way in forming *p*-reduplicant from the base:

/mu:d-RED-m/	OCP	FAITH-AFFIX	MAX-IO	*ONS/N	MAX-BR	VOP	IDENT-BR(lab)
a. mu:d-mu:d			*	**!			
☞ b. mu:d-pu:d			*	*	*!		
c. mu:d-mmu:d	*!			***			
d. mu:d-bu:d			*	*	*	*!	
e. mu:d-tu:d			*	*	*		*

Tableau (2). OCP>>FAITH-AFFIX>>MAX-IO>>*ONS/N>>MAX-BR>> VOP, IDENT-BR (lab)

In this tableau, the optimal candidate from input /muːd-RED-m/ is [muːd-puːd], with same place of articulation to affix *m-.* Although it violates *ONS/N (since the base onset is a bilabial nasal [m]), this candidate is optimal because it avoids the violation of IDENT-BR(lab) , as shown by the comparison with suboptimal candidate [muːd-tuːd] in (2e), and also it avoids violation of VOP, as shown by the comparison with the suboptimal candidate [muːd-buːd] in (2d).

5. Conclusion

As discussed, we examined *m*/*p*-reduplication in Central Sarawani Balochi as a type of reduplication which is used to signal augmentative meaning. We proposed, based on our Optimality theoretical analysis, that m/p-reduplication is an example of Alderete *et al.* (1999) morphological fixed segemntism. Then we argued that prefix *m*- is considered as overwriting morpheme. Therefore, the presence of such a morpheme indicated that IO faithfulness to the overwriting morpheme has taken precedence, through ranking over the MAX-IO faithfulness constraint. Tableau1 established this result formally. Moreover; we regarded morpheme *m*- as a prefix which selected the alternate *p*- when the word has already started with *m*. Based on SGG and constraints on onset sonority hierarchy, we explained that an alternation affix for *m*- should be a voiceless obstruent, but bilabial. Tableau 2 demonstrated the ranking for relevant constraints to form an optimal output with *p*- as a fixed segment.

References

ALDERETE, John, Jill BECKMAN, Laura BENUA, Amalia GNANADESIKAN, John MCCARTHY & Suzanne URBANCZYK (1999) "Reduplication with fixed segmentism", *Linguistic Inquiry*, 30, 327-364.

BARANZEHI, Adam Nader (2003) "The Sarawani dialect of Balochi and Persian influence on it", in Carina Jahani & Agnes Korn (eds), *The Baloch and Their Neighbors*, *Ethnic and Linguistic*

Contact in Balochestan in Historical and Modern Times, Wiesbaden: Reichert Verlag, 75-111.

JAHANI, Carina (2001) "Balochi", in J. Garry & C. Rubino (eds.), *Facts about the World's Languages: An Encyclopedia of Word's Major Languages, Past and Present,* New York/ Dublin: H. W. Wilson, 59-64.

JAHANI, Carina & Agnes KORN (2009) "Balochi", in Gernot Windfuhr (ed.), *The Iranian languages*, London/New York: Routledge, 634-692.

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

MCCARTHY, John & Alan PRINCE (1986) "Prosodic Morphology", Ms., University of Massachusetts, Amherst, and Brandeis University, Waltham, Mass. [Issued in 1996 as Technical Report 32, Rutgers University Center for Cognitive Science.]

MCCARTHY, John & Alan PRINCE (1990) "Foot and word in Prosodic Morphology: The Arabic broken plural", *Natural Language & Linguistic Theory*, 8, 209-283.

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

MCCARTHY, John & Alan PRINCE (1993b) *Prosodic Morphology I: constraint interaction and satisfaction*, University of Massachusetts, Amherst and Rutgers University. [To appear as Technical report no. 3, Rutgers Universiry Center for Cognitive Science. Cambridge, Mass.: MIT Press.]

MCCARTHY, John & Alan PRINCE (1994) "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].

MORADI, Mohammadbakhsh (2012) *Morphological Description of Sarawani Balochi Dialect of Seb*, Unpublished MA Thesis, Azad University of Fars Research Center.

PRINCE, Alan & Paul SMOLENSKY (1993) Optimality Theory: Constraint interaction in generative grammar. Unpublished ms., Rutgers University & University of Colorado, Boulder. Published 2004, Malden, MA & Oxford: Blackwell.

SELKIRK, Elizabeth O. (1984) "On the major class features and syllable theory", in Mark Aronoff & Richard T. Oerhle (eds), *Language sound structure: studies in phonology and presented to Morris Halle by his teacher students,* Cambridge, MA: MIT Press.

URBANCZYK, Suzanne (2007) "Reduplication", in Paul de Lacy (ed.), *The Cambridge Handbook of Phonology*, Cambridge: Cambridge University Press, 473-493.

USSISHKIN, Adam (2007) "Morpheme position", in Paul de Lacy (ed.), *The Cambridge Handbook of Phonology*, Cambridge: Cambridge University Press, 457-472.

YIP, Moria (1992) "Feature geometry and cooccurrence restrictions", *Phonology*, 6, 349-374.

ZEC, Draga (2007) "The syllable", in Paul de Lacy (ed.), *The Cambridge Handbook of Phonology*, Cambridge: Cambridge University Press, 160-194.