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**The phonology of Iranian-Balochi dialects : description and analysis**  
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## Chapter (1)

### Introduction

The present study deals with the phonological system of three Iranian Balochi dialects namely Mrijaveh Sarhaddi Balochi (MSB), Sarawani Balochi (SB) and Lashari Balochi (LB)". Those three selected Iranian Balochi dialects (henceforth IBDs) are spoken respectively in Mirjaveh, Sarawan, and Lashar in Sistan and Baluchestan<sup>1</sup> province, which is located in the southeast of Iran. As to the title of the present thesis, both descriptive and theoretical approaches are concerned, since they can complement each other, connecting language (i.e. Balochi) to Language (i.e. universal grammar), and give a formal and precise description and analysis of the grammatical properties of IBDs sounds.

My main concern in the present research is to reveal how speech- sounds are structured and function in IBDs with both descriptive and theoretical approaches. Since only some descriptions and no theoretical studies have been previously done on the phonological system of Balochi, the present study can be regarded as the starting point for doing both descriptive and theoretical studies on the phonological system of Iranian-Balochi dialects.

Every phonological analysis is dependent on theory, the particular theory chosen in the present research to analyze IBDs data is Optimality Theory (OT). Besides my personal interest in this modern theory of phonology, I regard the present study as an opportunity to examine how a constraint-based theory treats the Balochi data. The value of a theory is measured based on its insight and prediction in analyzing language data. However, *The Phonology of Iranian-Balochi Dialects: Description and Analysis* has no ambition to offer innovative and new phonological phenomena, but rather to present and analyze new data for Balochi, as one of the Indo-Iranian languages, from the typological perspective which might be significant for the development of OT principles, and might ultimately help our understanding of what human language is.

Based on the chosen theory (here OT), I characterize and make an inventory of the sounds in IBDs, how the sounds can be combined to form syllable and words, what the stress patterns are like in IBDs, and so on. Moreover, the nature of alternations in IBDs data, that is, the differences in phonological form that we observe in the realization of a morpheme in a different context, is investigated.

This thesis is of interest to descriptive linguists and specialists of OT. The theoretical part is ideally suited for two groups of readers: first those who are interested in learning to do phonology in OT, and those phonologists who are

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<sup>1</sup> This is the official English spelling used in Iran; also spelled *Sistan va Baluchestan* (Okati 2012)

experts. OT learners should focus on the parts of the theory which sheds light on the data; experts should concentrate on data which shed light on the theory.

The remainder of this chapter is organized as follows. Section 1.1 is dedicated to the historical survey of the Baloch of Iran. Section 1.2 deals with the Balochi language and its position in the Iranian language family. Section 1.3 will introduce the Balochi dialects. An overview of the previous investigations on Balochi phonological system will be presented in section 1.4. In section 1.5, the methods used for this work will be discussed. Section 1.6 deals with the theoretical considerations. Finally, section 1.7 presents the aims of the present study.

## 1.1 Historical survey of the Baloch of Iran

Grierson (1921:327, cited in Barjasteh Delforoz 2010) refers to the original home of the Baloch in the neighborhood of the Caspian Sea, so the north-western part of the Iranian linguistic area was the early homeland of the Baloch, but later they migrated to Kerman and then in 11<sup>th</sup> century A.D., under the pressure of the Seljuq attack, they were forced to move to the south-east part of Iran, to Sistan and Makran. Their present settlements mainly form part of Sistan and Baluchestan province in Iran and Baluchestan province in Pakistan as well.

According to the old historical ballads of the Baloch, which go back to the 16<sup>th</sup> century, the Baloch are Arab in origin from Halab (Aleppo). After fighting on the side of Imam Hussein against the Caliph Yazid at Karbala, they left their homeland for Sistan (Elfenbein 1989:640).

The Baloch migrations may have continued during the next centuries because of different reasons. The last ones happened at the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> centuries from Sistan to Turkmenistan (Axenov 2006:19). Immigration also took place at different times during the 20<sup>th</sup> century from Sistan to Khorasan and Golestan provinces, mostly because of prolonged droughts (Barjasteh Delforooz, 2010:18).

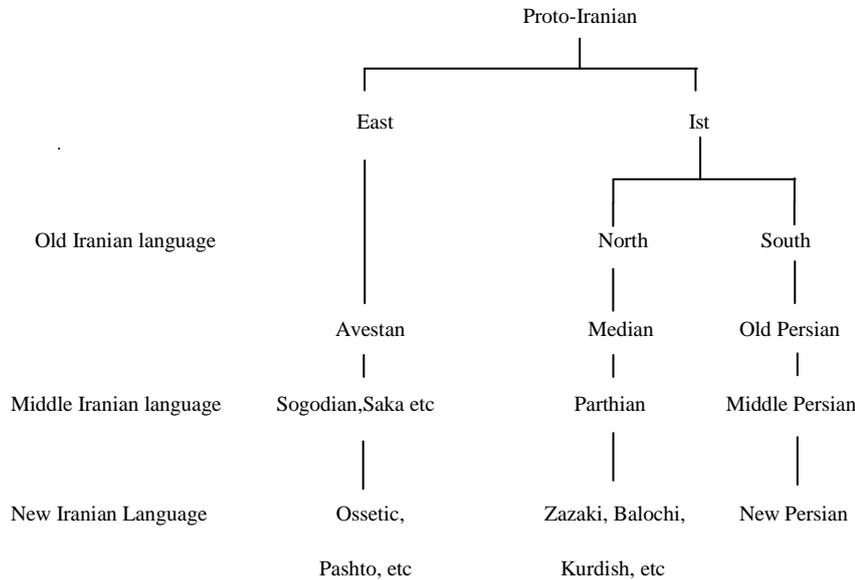
Presently the Sistan and Baluchestan province is the main area for Baloch of Iran. It is located in the southeast of the country, bordering Pakistan and Afghanistan and its capital is Zahedan. The province is the largest in Iran, with an area of 181,785 square km and a population of 2.4 million. Its major cities are Khash, Iranshahr, Sarawan, Zabol, Sooran, Nikshahr and commercial free port of Chabahar on the coast of Gulf of Oman. On the map of Iran (see Map 1), the Sistan and Baluchestan province is highlighted.

Map1: The location of Sistan and Baluchestan Province in the Islamic Republic of Iran



## 1.2 The Balochi language and its position in the Iranian language family

From the historical point of view, the position of Balochi among western Iranian languages is controversial. While Paul (2003:61) claims that Balochi seems to be more a south-western Iranian language, Elfenbein (1989) and Korn (2003) introduce this language among the north-western group of Iranian languages, which also includes other new Iranian languages such as Kurdish, Zazaki, Gilaki, Mazandarani, and Taleshi, whereas Persian, Lori-type languages, etc., are classified as south-western Iranian languages. Geographically, Balochi is spoken in the south-eastern part of the Iranian language area. Korn (2003:50) shows the position of Balochi among other Iranian languages in the form of family tree as below:



### 1.3 Balochi dialects

Balochi has a wide variety of dialects, which are distinguished by various features of their phonology, lexicon, and morphology. Early linguists considered that there are essentially two dialects of Balochi: Northern and Southern dialects. Two distinguished linguists who believed in this dichotomy were Geiger (1889) and Dames (1891). The first linguist who took a different view was Grierson (1921), who proposed a western versus eastern dichotomy. Elfenbein (1966), Barker & Mengal (1969), and Jahani (1989) are among the supporters of the latter classification (cited in Axenov 2006: 21).

The most systematic classification of Balochi dialects has been done by Elfenbein. He presents his results in several articles and books. According to Elfenbein (1989:636-637), Balochi consists of two main groups of dialects, Eastern, and Western, which are divisible into six major dialects:

- 1) Rakhshani with its three subdialects:
  - a) Sarhaddi (including Balochi of Sistan and Balochi of Turkmenistan)
  - b) Panjuri
  - c) Kalati
- 2) Sarawani
- 3) Lashari

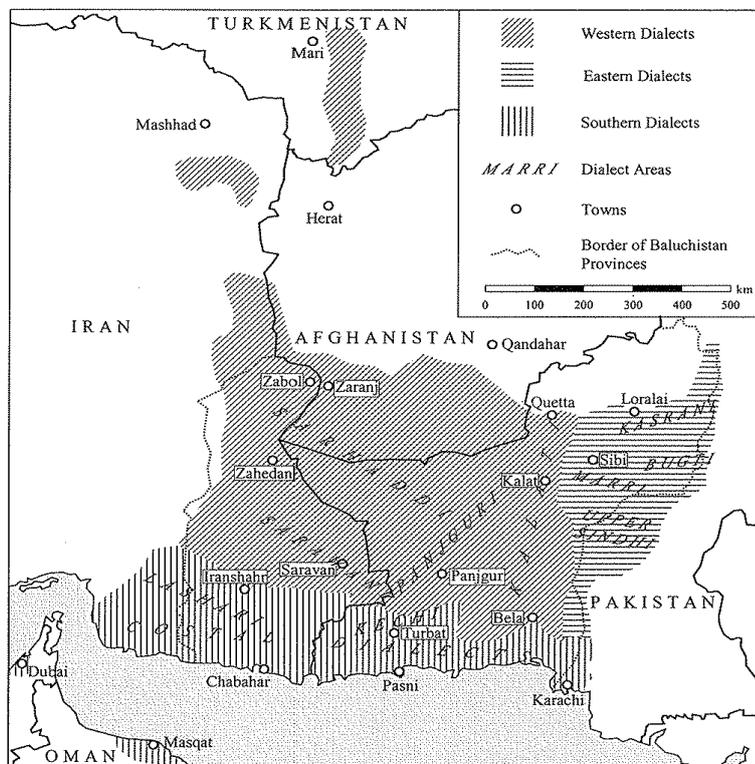
- 4) Kechi
- 5) Coastal dialects
- 6) Eastern Hill Balochi

This last dialect (Eastern Hill Balochi) represents the Eastern group while the rest (1-5) belong to Western Balochi.

Jahani and Korn (2009:636) have broadly divided the Balochi dialects into the three groups of Eastern, Western, and Southern Balochi. In their Balochi dialects division, Sarawani and Panjuri are considered as transitional dialects between Western and Southern Balochi in Iran and Pakistan, respectively. Moreover, in their classification Southern Balochi dialects include the Lashari, Sarbazi, Kechi, and coastal dialect. The three main dialect areas of Balochi (Western, Southern, and Eastern) are shown on Map 1.2. Jahani (2001:59) estimates the total number of Balochi speakers between 5 and 8 million.

According to the Balochi dialects divisions that have been discussed above, the corpus data for this thesis can be classified as belonging to the Southern group (Lashari Balochi), Southern-Western group (Sarawani Balochi) and subdialect of the Rakhshani or Western group (Sarhaddi Balochi).

Map1.2 Dialects area of Balochi (Barjasteh Delforooz 2010)



#### 1.4 Previous research on the phonological system of Iranian-Balochi dialects

While the oldest works on Balochi language date back to the 19th century (cf. the works of Leech (1838), Lewis (1855), Pierce (1874), and Mockle (1877)), until around twenty years ago there was no extensive description of the Balochi language and its dialects. This was noted by Elfenbein (1990) who writes that in spite of about hundred years that have passed since the pioneering works of Dames and Geiger, there is still “no systematic description of the language as a whole, no dictionary, and no comprehensive description of the dialects”. During the last two decades, more systematic work has been done on Balochi (Okati, 2012:17).

The number of works which have been done on the phonological system of Balochi dialects (both Iranian Balochi dialects and non-Iranian Balochi dialects) is limited and no works have been done on the phonology of any Balochi dialects based on OT.

The very first research on the phonology of Balochi is done by Dames (1891). He distinguishes long vowels, short vowels, and diphthongs in Eastern Balochi. Besides that he considers the phenomenon of nasalization in Eastern Balochi as well.

In 1966, Spooner studies the Iranian Balochi dialects, mostly Sarawani Balochi which is spoken in Sistan and Baluchestan province in Iran. In this research, Spooner presents the vowel inventory of Sarawani as *a*:, *e*:, *i* (*e*), *i*:, *o*, *u*:, and also he describes the vowel distribution and phonetic features. On the nasalization process, he explains that final *n* is pronounced only before suffix, otherwise, the vowel is nasalized (Okati, 2012).

In 2003, *The Sarawani dialect of Balochi and Persian influence on it* was published by Baranzehi. The purpose of this paper is to describe the Sarawani dialectal varieties and Persian influence on this dialect. Besides, the phoneme inventory of Sarawani Balochi is presented in his work. He also includes the nasalized form of all vowels of this dialect, but no more study has been done on the phonological system of Sarawani in this article.

Moreover, in 2003 special research on the phonology of Sarawani Balochi was done by Soohani. That MA thesis comprises a contrastive investigation of the phonology of Sarawani dialect of Balochi, from the point of view of the ruling linear and non-linear models of modern phonology.

An extensive contribution to the historical grammar of Balochi is done by Korn and published as a book, *Towards a historical grammar of Balochi, studies in Balochi historical phonology and vocabulary*, in 2005. The main part of the book is a new discussion of historical phonology of Balochi.

Two more works dedicated to the investigation of the phonological system of Iranian Balochi dialects have to be mentioned here. The first, *Balochi* by

Jahani and Korn, was published in 2009 and it provides a description of phonology, morphology, and syntax of Balochi dialects. The phonological section is largely based on the details about the words mentioned in Korn (2005). They briefly present the phoneme inventory, syllable structure and stress patterns of Balochi dialects. The second, *Stress pattern system in Sarawani Balochi* was written in 2010 by Soohani. That MA thesis contains a comprehensive study of stress pattern systems in Sarawani Balochi based on Hayes (1998).

In 2012, the vowel systems of Iranian-Balochi dialects were studied by Okati. In that Ph.D. dissertation, an empirical acoustic analysis is applied to a large body of data on the vowel inventories of different Balochi dialects spoken in Iran.

## 1.5 Methodological remarks on present research

The study of unwritten languages such as Balochi presupposes the use of methods of field linguistics, which is based on both spontaneous and purposeful recording of speech. The spontaneous recording of speech occurs in the process of oral communication of the language under study. The purposeful recording of speech takes place when a speaker is requested to produce an oral text which is written down or recorded on the tape by the researcher (Axenov, 2006). The language data which is used in the present thesis is mostly based on the purposeful recording of speech which was gathered through the author's trip to Zahedan by interviewing 12 informants during 2010 to 2014. Some language consultants are illiterate and some were educated. Most of them have lived in Sistan and Balochestan their entire lives. This investigation does not take into account language data from nomadic groups (The social security conditions in Zahedan did not allow the present thesis researcher at that time to be out of Sistan and Baluchestan University.). The questionnaire for gathering data in the present study consists of different classes of mono-morphemic words, compound words, complex words, pair words, verbal paradigms, simple transitive and intransitive sentences, and short stories. The present researcher requested each consultant to repeat each item in their own language (Balochi) three times and all data were recorded with a digital recorder.

## 1.6 Theoretical considerations

The phonological analysis in this study will be stated in the framework of Optimality Theory (Prince and Smolensky 1993, McCarthy and Prince 1993a, b). In particular, I will use the new version of representing elements in OT which is known as "comparative tableaux" (Prince 2000). In this sub-section, I present a brief introduction of the basics of OT.

An optimality-theoretic grammar consists of fixed components: the generator of input, candidates that are possible outputs, a set of ranked constraints, and an evaluation system EVAL. The generator GEN is a mechanism that generates candidates, possible phonetic output forms that can basically have any form. The set of constraints CON forms the grammar and works as a filter for the candidates; OT recognizes two types of constraints, faithfulness constraints, and markedness constraints. Markedness constraints are grounded in phonetics and they do not allow the occurrence of sequences which are difficult to articulate or perceive, e.g. voiced codas are dispreferred, syllable onsets are preferred, syllable nuclei should consist of one vowel (Kager 2001). Faithfulness constraints require that outputs preserve similarities between the output and its input. In other words faithfulness constraints oppose changes (Kager 1999). These constraints are universal and violable: a candidate can either violate or satisfy a constraint. Violation of a constraint is possible if and only if such violation is necessary in order to better satisfy a higher-ranking constraint. Given an input, the grammatical output is the one that best satisfies the ranked constraint system among an infinite set of candidate output forms. Consider for example hiatus avoidance in Balochi. In this language, the occurrence of two immediate vocalic syllable peaks is not permitted. Hiatus is resolved in Balochi by inserting a consonant between two vowels, for instance in the morpheme boundary of the present participle and first person singular marker: /distæ-ɑ:n/ → [distæ-j-ɑ:n] “I have seen”. The constraint responsible for epenthesis of /j/ between two vowels is known as (NO HIATUS). I also need constraints against deletion (MAX) and insertion (DEP) of any phonological materials. The constraints are summarized in (1):

- (1) NO HIATUS  
Vowel hiatus is prohibited
- MAX-IO  
Input segments must have output correspondents. (No deletion)
- DEP-IO  
Output segments must have input correspondents. (No epenthesis)

In languages that do not allow vowel hiatus as in Balochi, NO HIATUS markedness constraint must outrank DEP since epenthesis applies in order to prevent hiatus violations. Similarly, MAX must outrank DEP; otherwise, deletion would have been the chosen repair. I cannot establish a ranking between MAX and the NO HIATUS, since the two never conflict in the data we are considering.

## (2) NO HIATUS, MAX » DEP

The mapping of the input form to the winning candidate is illustrated by using a constraint tableau (3):

## (3) Tableau of vowel hiatus resolution in Balochi (to be revised)

Input: /distæ-ɑ:n/	NO HIATUS	MAX-IO	DEP-IO
a. ☞ distæ-j-ɑ:n			*!
b. distæ-n		*!	

The input form is shown in the upper left-hand cell. The candidate output forms that we are considering are listed below the input form (even though the candidate set is infinite, few candidates are only listed). The winning candidate is indicated by a pointing hand☞. The constraints that constitute the grammar are listed at the top. A broken line between columns indicates the lack of evidence for crucial ranking between the constraints so separated. A solid line indicates that the left-hand constraint outranks the right-hand one. An asterisk in a cell indicates a constraint violation. Fatal violations are indicated by an asterisk followed by an exclamation mark. Cells that are irrelevant to determining the grammatical output are shaded. The only purpose of the pointing hand, exclamation mark, and shading is to make the tableau easier to read (Orhan Orgun 1996).

## 1.6.1 Comparative tableaux

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 the desired optimum which is indeed suboptimum. To examine comparative tableau, again consider vowel hiatus resolution in Balochi, which has already been represented in comparative star-marking format as in (3), in the following comparative tableau:

## (4) Comparative tableau version of vowel hiatus resolution in Balochi (to be revised)

Input: /distæ-ɑ:n/	NO HIATUS	MAX-IO	DEP-IO
a. ☞ distæ-j-ɑ:n			*
b. distæ-n		*W	L

As tableau (4) represents, the optimal candidate is the candidate (a), so it is the optimum candidate and candidate (b) is the suboptimum candidate. *W* shows

that the constraint ranking prefers the desired optimum candidate (prefers the Winner, in this case, candidate (a)) and *L* shows that the constraint ranking prefers the desired suboptimum candidate (prefers the Loser, here we mean candidate (b)) and *blank* means constraint does not distinguish the candidates. In ranking theory, each *L* must be preceded by a *W* (Prince, 2000: 3).

## 1.7 Purpose and significance of the study

This work investigates the phonological system of three Iranian-Balochi dialects, i.e., Sarawani Balochi, Lashari Balochi and Mirjaveh Sarhaddi Balochi from OT point of view, and is the first systematic study of its own on these dialects.

Although some descriptions have previously been done on the phonological system of Balochi, the present study can be considered as the starting point for doing both descriptive and theoretical studies on the phonological system of Iranian-Balochi dialects, mainly providing each description with its relevant “comparative tableaux”.

This Study of Balochi can partly be seen as a contribution to Balochi language documentation. Furthermore, this study can serve as a model for further study of other Iranian languages and dialects. Additionally, it can be also helpful in the reconstruction of the phonological system of older Iranian languages such as Old Persian and Parthian. Finally, the data and results provide philologists with information that helps them have the most comprehensive understanding of the phonological typology of the language in the area.

*The Phonological of Iranian-Balochi Dialects: Description and Analysis* is organized into six chapters. The second chapter presents a segmental phonology of three Iranian-Balochi dialects, which shows the phoneme inventories of these three dialects and analyses the allophonic variations of these dialects based on OT. Chapter three describes the suprasegmental and prosodic phonology of IBDs. First the syllable structure, geminate and stress pattern system in these dialects are described, and then the relevant OT analyses are given as well. The phonological processes in these three Iranian-Balochi dialects observed in the data such as metathesis, local assimilation, hiatus resolution, and deletion are investigated and analyzed in the OT approach in chapter four. Chapter five is dedicated to the study of the phonological interface in Iranian- Balochi dialects; it focuses on the interaction between phonology and morphology, for instance, reduplication, root-affix asymmetry, phonologically conditioned allomorph selection and phonological sensitivity to morphological structure. Chapter six consists of the general conclusion, which describes similarities and differences between the dialects (focusing on microvariations) and sums up the study.