"Examination of Vowel Lengthening in Sistani Dialect within the Framework of Standard Generative Phonology"

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Abstract

Vowel lengthening is a process that is designed in relation to Sistani dialect vowels. In this dialect, the vowels can be lengthened under some certain conditions. With a little care in gathered information, this point is specified that the structural description is different for lengthening of long and short vowels. The short vowels aren't lengthened naturally. It only occurs when we have omission of a consonant in a word (compensatory lengthening). For example, it can be referred to deletion of (glottal) consonant and compensatory lengthening of preceding vowel. But the long vowels work differently which is discussed in this paper and this dialect, vowel lengthening cannot work meaningfully. In fact, in this dialect, all the vowel lengthening is environmental. That is, it will be produced as a result of elision of consonant (compensatory lengthening) or because of syllable structure.

Key words: Generative Phonology, Vowel lengthening, Phonological rules, Interaction, Sistan.

Introduction

In this article, we speak about Sistani dialect and examine vowel lengthening. The Sistani dialect is spoken in Sistan region in south-east of Iran and north of Sistan and Balouchestan province. Sistan has an area about15197 kilometers and its400000 people population has settled in a very large desert. It has about 60 degree and 10 minutes to 61 degree and 50 minutes geographic length and 30 degree and 18 minutes to 31 degree and 20 minutes geographic width. This province has borders from north and north-east by south Khorasan, from south by Zahedan city and from west to Loot desert and from east to Afghanistan country.

Methodology

In this paper, the information is gathered in field and direct method. The selected statistical community in this research included 12 informants from Sistan region in 18 to 60 old groups and in male and female sexes. They were native speaker of the dialect under the study. The sampling method was also done in an interview form. It is also based on using questionnaire and recording sound on a digital recorder set.

Theory

This article analyzes vowel lengthening in Sistani dialect within the framework of Standard Generative Phonology Theory. Here is a brief review of generative phonology and its principles, as we are all familiar with it. This theory was proposed by Chomsky and Halle for the first time in 1968, when they published their important work, *The Sound Pattern of English* .And because of this, the theory is in summary called SPE. In fact Generative phonology is a component of generative grammar that assigns the correct phonetic representations to utterances in such a way that reflects a native speaker's internalized grammar. The followings are crucial components of generative phonology:

-Levels of phonological representation

Generative phonology includes two levels of phonological representation:

- o An underlying representation which is the most basic form of a word before any phonological rules have been applied to it. Underlying representations show what a native speaker knows about the abstract underlying phonology of the language.
- o A phonetic representation which is the form of a word that is spoken and heard.

-Phonological rules

Phonological rules map underlying representations onto phonological representations. They delete, insert, or change segments, or the features of segments.

-Derivations

-Distinctive features

Distinctive features make it possible to capture the generalities of phonological rules.

-Linearity

A stream of speech is portrayed as a sequence of discrete sound segments. Each segment is composed of simultaneously occurring features.

Data analysis

By studying the gathering data and analyzing the lengthened long[1] vowels, we have set the information in a table you can see in the following. Then, based on the framework of Generative Phonology and using the internal evidence, the alternation identified and introduced.

Transcription	Persian	English	Transcription	Persian	English
jǽɡ̥	یک	One	særmɑ́ χʷɒrdʷ+ɒ	سرما خوردم	I'm cold
biːbí	مادربزرگ	Grandmother	ŋˀgæː+dɑr+iː́	پرستاری	To nurse
bɪː́l+æ	بیل را...	Shovel	sǽχtʰ	سخت	Hard
χʷõːnǽ	خانه	House	kʰətʰɑː́b+æ	کتاب را...	Book
ʁ(ə)zɑ́	غذا	Food	ʔʷõn̠ˀ+dʒǽ	آنجا	Carpet
ʃmɑ́	شما	You	ʁɑːlí	قالی	Kind of shoe
værʈʂʰə́	چرا	Why	giːvǽ	گیوه	I give
ɡʷotʃʰǽ	بچه	Child	mɪː+dʷɒ́	می‌دهم	Sheep
drǽχtʰ+ɑ	درخت‌ها	Trees	ɡʷusfəː́	گوسفند	Doll
			lʷoːbǽtʰ	عروسک	

In the above corpus, data included both short and long vowels in order to make the comparison easier according to the data so we can consider the following alternation in phonological representation (PR) level:

(PR)   **V ~ Vː**

According to SPE, we might make the assumption that any one of the surface alternations could serve as the underlying representation (UR) from which the other is derived. Then we recognize the underlying representation by using the methodological criteria. We have used some of the criteria:

Frequency of Occurrence
According to the criteria in the above alternation, simple vowel is UR. And the reason is because the simple vowel was seen in different and various contexts while the lengthened vowel was not, it has also occurred in special contexts, (_CV).

Phonetic Plausibility

Kambuzia (1388:215) believes the length is meaningful in relation with the phones that have the ability to be lengthened, so that if they are articulated in a shorter or longer time, they will not be changed to another

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[1]In this article we don't investigate the lengthening of short vowels. As it is said the lengthening of short vowels only occurs in the condition of a consonant deletion in a word.

phonemes. And among phones only vowels have such a characteristic. In phonology, vowel lengthening is also a rule, but the amount of the lengthening is different from one language to another language. So vowel lengthening is a phonologically plausible process, and the simple vowel is our desired UR.

Phonological Naturalness

According to the criteria we can consider the simple vowel as an UR. This is acceptable because this process is a common process in many languages such as English, Arabic, Indo-European languages and also Persian language and its different dialects.

Universal Tendencies

According to the criteria between two A and B features, the feature can be called UR that can appear in a language in isolation. Since the lengthened vowel can't be seen in any language without simple vowel, we can consider the simple vowel as an underlying representation.

Now we can formulate the ultimate form of alternation:

$$\textbf{UR} \qquad \textbf{V}$$

$$\textbf{PR} \qquad \textbf{V} \qquad \textbf{V:}$$
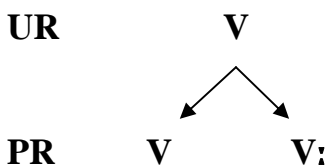
Then we can formulize the related rule according to data and the alternation:

Rule 1: Lengthening of long vowels

a)

$$\begin{bmatrix} V \\ \text{-short} \end{bmatrix} \rightarrow \begin{bmatrix} \text{+long} \end{bmatrix} \; / \; \text{—} \; CV$$

b)

$$\begin{bmatrix} V \\ \text{-tense} \\ \text{-long} \end{bmatrix} \rightarrow \begin{bmatrix} \text{+long} \end{bmatrix} \; / \; \text{—} \; CV$$

As the number and the quality of long vowels are different in Persian and Sistani, we determine two different rules based on the kind of long vowel. So the first rule is regarding the long vowels [i,u,ɑ], and the second one is in relation to high and lax vowels [ɪ,ʊ] which are only seen in Sistani dialect. Then we will examine and verify the correctness of the rules by using some of the derivations. Below are some of the examples:

1) Derivation of [ʁ(ə)zɑ́] (food):

UR 　　　　　　　　 /# ʁæzɑ #/
　　　　　　　　　———————————————
　　　　　　　　　　# ʁəzɑ́ # 　　　　　　　　...٢
　　　　　　　　　-------------------٣ 　　　　　R_{length}

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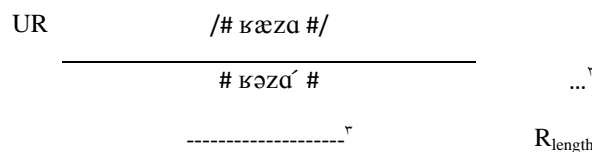
[2]This dotted line shows the rules like stress and etc. that we won't investigate.

PR   [ʁ(ə)zɑ́]

In the above derivation, there is no structural description for the vowel lengthening rule and thus the rule can't be employed. As you see, the long vowel doesn't have an extra length.

2) Derivation of [biːbí](grandmother):

UR	/# bibi #/	
	# bibí #	...
	# biːbí #	R$_{length}$
PR	[biːbí]	

3) Derivation of [χʷʊ̃ːnǽ] (house):

UR	/# χʊnæ #/	
	# χʊnǽ #	...
	# χʊːnǽ #	R$_{lengthb}$
	# χʊ̃ːnǽ #	R$_{nasalization}$
	# χʷʊ̃ːnǽ #	R$_{Rounding}$
PR	[χʷʊ̃ːnǽ]	

As you can see in 2 & 3derivations, the structural description is prepared and the rule is able to affect the underlying representation.

And the Final point investigates the hierarchical relationship between two vowel reduction and vowel lengthening rules (you can refer to M.A thesis of Falahi Rad 1390). In phonological rule system of Sistani dialect a bleeding interaction exists between these rules. In other word, two A and B rules stand in a potentially bleeding relation if the application of A removes inputs to B (Kenstowicz, 1994:94). This relationship can be shown as below:

Bleeding Interaction: Lengthening of vowel < Vowel Reduction

Results

By interpreting the corpus and analyzing the results, the discovered rule was proved. Also, it proves that the vowel lengthening isn't a phoneme and, so it doesn't cause semantic distinction. It is necessary to mention that in this dialect the lengthening of short vowels occur only if we have the deletion of (glottal) consonant and Compensatory lengthening of vowel. This rule shown below wasn't studied in this article:

Rule 2: Deletion of (glottal) consonant and Compensatory lengthening of vowel

$$
\text{SD} \quad \text{V} \quad \begin{bmatrix} \text{C} \\ +\text{low} \end{bmatrix} \quad \text{C}
$$

$$
\text{SI} \quad 1 \quad \quad \quad \quad \quad 3
$$

$$
\text{SC} \quad \begin{bmatrix} 1 \\ +\text{long} \end{bmatrix} \quad \begin{matrix} 2 \\ \text{ø} \end{matrix}
$$

[3]This dotted line shows the structural description isn't prepared for the rule and the rule can't affect the underlying representation.

Resources

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