

## **Title: Several Active Phonological Processes in Shirazi Dialect**

### **1. Introduction**

The study of dialects has always been an area of interest in linguistics. In addition to the similarities between the Shirazi Dialect and Standard Persian, there are differences in the type of phonological processes, some of which are examined in this study. The question of this study is: 1. What are the active phonological processes in Shirazi Dialect?

### **2. Research Methodology**

The data required for the research have been collected in several ways: 1. Interviews with 5 Shirazi Informants, 2. Using the linguistic intuition of one of the authors to verify the data, 3. Using sources such as Samandar (1377 and 1383) and Zarei (1383) who have written poems and stories in this Dialect. After collecting more than five hundred simple, complex, and compound words and phrases, the data have been categorized according to the common context and the type of the process of each has been identified, described, and analyzed, and the rule of each process has been written. At the end of each section, one of the data from the underlying form to the phonetic one has been represented as an example.

### **3. Data Analysis**

In this section, the phonological processes such as deletion, assimilation, vowel raising, and vowel harmony in Shirazi Dialect are identified in various contexts, and the necessary rule for each is written in the Theory of Generative Phonology.

#### **3-1. Deletion Process**

The most obvious type of sound change is the disappearance of vowels or consonants. In the data of Table 1, in the Shirazi Dialect, the consonants /t/ and /d/ are deleted in the consonant clusters /st/, /ʃt/, /xt/, /ft/ as well as /nd/, /zd/,

at the end of the word and also before the consonant. This deletion process is written as Rule 1:  $[t, d] \rightarrow \emptyset / \text{CVC} \text{ --- } \{\#, C\}$

### 3-2. Assimilation Process

The process of assimilation is the most common type of phonological change during which a sound becomes similar to its environment in one or more features. According to the data in Table 2, the assimilation process is of the progressive assimilation type, during which the consonants /t/ and /d/ in the consonant sequences /-st-/ and /-zd-/ have been assimilated in the context between two vowels in the manner of the articulation, so that a kind of complete assimilation has occurred. This process is represented as Rule 2:

$$\begin{aligned} t &\rightarrow s / V s \text{ --- } V \\ d &\rightarrow z / V z \text{ --- } V \end{aligned}$$

### 3-3. The process of vowel raising before the postalveolar consonant /ʃ/

In Crystal Dictionary (2008), vowel raising is described as a vertical process that affects the height of the tongue and is the opposite of vowel lowering. For example, in vowel harmony, a vowel may be raised in the environment of a raised vowel that follows it. During language evolution, a vowel that is in a lower position may be raised to a higher position. In the verbs in Table 3, wherever the back low vowel /ɑ/ precedes the postalveolar fricative consonant /ʃ/, it has been raised one degree and changed into the back mid vowel [o]. In fact, a kind of assimilation in the feature of height between the postalveolar fricative consonant and the low vowel is observed. This transformation includes all verbs containing the consonant cluster /-ʃt/, whether or not the consonant /t/ has been deleted. This process is shown in Rule 3:

$$\alpha \rightarrow o / \text{ --- } \int (t)$$

### 3-4. The process of removing of the suffix [-e]

#### 3-4-1. Deletion of the suffix [-e] after the noun ending mid vowels /e, o/ in genitive case

In standard Persian, in phrases such genitive or adjectival case, the vowel [-e] is inserted as a suffix symbol after the first noun in two contexts: a) Between

two nouns in the genitive case, such as: [livan-e-ʔab]; b) Between a noun and an adjective in the adjectival case, such as: [ruz-e-rowʃan]. If the first noun ends in a vowel, to prevent the hiatus, the palatal glide [j] is inserted as an epenthetic consonant between the two vowels, according to the features of the second vowel [-e], such as: [labu+j+e-daɣ]. In Shirazi Dialect in the aforementioned contexts, if the first noun ends in a mid-vowels /e, o/, only the glide [j] is revealed and the genitive suffix [-e] is removed.

Rule 4: Inserting the palatal glide [-j-] in the genitive and adjectival cases when the first noun ends in a mid-vowel [e, o]:

$$\emptyset \rightarrow j / V [e, o] \text{ --- } \#V$$

$$\emptyset \rightarrow j / V [-\text{high}, -\text{low}] \text{ --- } \#V$$

3-4-2. Deletion of the suffix [-e] after the first noun ending in consonant or high vowels /i, u/ in genitive or adjectival cases

Rule 5. Omitting of the suffix /-e/ at the end of nouns ending in a consonant or high vowels /i, u/ in the genitive or adjectival cases

$$e \rightarrow \emptyset / \{C, \textcolor{red}{i}, u\} + \text{ --- } \# C$$

3-5. Raising of the back low vowel /ɑ/ to mid [o] at the end of a word

The data in Table 6 show that free morphemes that end in the back low vowel /ɑ/ in Standard Persian is raised one level in Shirazi Dialect and changes to the mid vowel [o]. For example, the word "Farda" [fardɑ] is pronounced as [fardo] in Shirazi Dialect. The vowel /ɑ/ does not change in non-final position in data such as "ʔaɣo, babo, halo". This process occurs only at the end of the word and its rule is as follows:

Rule 5. Raising the back vowel /ɑ/ to mid [o] in the word-final context after a consonant

$$\alpha \rightarrow o / C \text{ --- } \#$$

3-6. Vowel gliding: Changes of the definite article /-u/ into a velar glide [w] after mid vowels

In Shirazi Dialect, the definite article /-u/ is transformed into a velar glide [w] in connection with words ending in mid vowels /e, o/ to eliminate the vowel hiatus. This rule in the Shirazi dialect is formulated as follows:

Rule 6: Changes of the definite article /-u/ into a velar glide [w] in hiatus with the mid vowels

$$u \rightarrow w / [e, o] + \text{---} \#$$

The process of vowel gliding feeds the process of assimilation for the [back] feature with the final mid vowel of the stem. So that, the front-mid vowel /e/ changes to the back mid vowel [o]. This process is shown in the form of Rule 7:

Rule 7. Backness assimilation between the velar glide [w] and the front-mid vowel /e/ at the end of the stem

$$e \rightarrow o / C \text{---} + w$$

$$V [-\text{high}, -\text{low}, -\text{back}] \rightarrow V [+back] / C \text{---} + w$$

3-7. The process of inserting the glides [j, w] between the high vowels at the end of stem and the definite article /-u/

In Shirazi Dialect, the definite article /-u/ is used in conjunction with words that end in the high vowels /i, u/, and the epenthetic glides [j, w] are inserted between the two vowels to avoid the vowel hiatus.

Rule 8: The process of inserting the epenthetic glides between the high vowel at the end of a noun and the definite article /-u/

$$\emptyset \rightarrow j / V [+high, -back] \text{---} + u$$

$$\emptyset \rightarrow w / V [+high, +back] \text{---} + u$$

3-8. Raising of the back low vowel /a/ to mid [o] in the causative suffix [-and]

Rule 9. Raising of the back low vowel /a/ to [o] in the causative suffix in the context before the sequence [-nd]

$$a \rightarrow o / \text{--- nd}$$

### 3-9. Raising the vowel of the imperative prefix due to vowel harmony

In Shirazi Dialect, there is a regressive vowel harmony in verbs; so that the stem vowel assimilates the prefix vowel with itself in terms of the characteristics of [back] and [high]. As can be seen in the data in Table 11, in the imperative case, by adding the prefix [be-] to the stem of the verb, regressive vowel harmony is seen in Shirazi Dialect, so that the features of the stem vowel are extended to the vowel of the prefix of the imperative. This process is shown in Rule 10:

Rule 10. Regressive vowel harmony between the stem vowel of the verb and the prefix of the imperative [be-]

$$e \rightarrow V [\alpha_{\text{back}}, \beta_{\text{high}}] / b \text{ --- } + CV [\alpha_{\text{back}}, \beta_{\text{high}}]$$

### Results

1. Stop /t/ in consonant clusters in the following contexts is deleted: a) At the end of a simple word as the second member of the consonant cluster, such as: [dast]; b) In sequences of three consonants as the second member in complex or compound words, such as: [dastceʃ]; c) At the boundary of two words before a consonant in genitive or adjectival phrases, such as: [dast baz].
2. Stop /t/ in the sequence /-st-/ in the context between two vowels in the feature of the manner of articulation is assimilated with the fricative /s/ and created as [-ss-]. For example, the word /daste/ is pronounced as [dasse].
3. The back low vowel /a/ in the context before the postalveolar fricative /ʃ/ in verbs with the consonant cluster /-ʃt/ is raised one degree and is promoted to the medial vowel [o].
4. The suffix /e/ is deleted in the genitive or adjectival phrases in the Shirazi dialect.
5. Whenever in the genitive or adjectival phrases, the first noun ends in one of the mid vowels /e, o/, the glide [j] is inserted in hiatus and then the suffix /-e/ is deleted.
6. The back low vowel /a/ at the end of free morphemes is raised to the mid vowel [o].
7. In Shirazi Dialect, the definite article is /-u/, which is attached to the end of the noun. In nouns that end in the mid vowels' /e/ and /o/, the suffix /-u/ changes to the

velar glide [w]. Then, the velar glide affects the mid vowel /e/ and assimilates it in the [+back] feature and turns it into the vowel [o].

8. The back low vowel /ɑ/ in the causative suffix /-and/ in the context before the sequence [-nd] is raised one degree and becomes the mid vowel [o].

9. The front mid vowel in the imperative prefix /be-/ is assimilated with the [back] and [high] features with the high vowels /i, u/ of the verb stem.