

## A Morphophonetic Approach to Hiatus in Spoken Persian Language

Fariba Ghatreh<sup>1</sup>  
Maral Asiaee<sup>2</sup>  
Saeed Rahandaz<sup>3</sup>

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### Abstract

Many studies in phonology and phonetics have considered a CV(C(C)) pattern for Persian syllable structure. Considering such pattern means that first, no syllable begins with a vowel in Persian and second, no two vowels can be said to be in hiatus (occur in adjacent syllables). But it seems that the situation is different in spoken mode. This article aims to study the possibility of occurrence of two vowels in adjacent syllables together, in continuous spoken Persian language. It also explores the effect of morphological elements (namely the clitics) on the degree and manner of occurrence and non-occurrence of hiatus in 1500 spoken data from Persian. To do so, we recorded the speech of 5 men and 5 women, all of whom are native Persian speakers. Their age ranges between 20 to 33, with the mean of 28.2 and a standard deviation of  $\pm 4.28$ . A set of data consisting of Vowel Context (No. 1)\* Morphological Context\* Vowel Context (No. 2) were presented to the speakers in form of 150 sentences. In Vowel Context (No. 1), we have words which end in an open syllable; since no word ends in /a/ in Persian, we only considered five vowels to end the words with (i.e. /i/, /e/, /u/, /o/ & /ɑ/). Vocalic Enclitics include /i/ as the indefinite marker in Persian, /o/ as a conjunction, /o/ which is the short form of “ra” that is an object marker in Persian and /e/ as a genitive marker. Apart from these enclitics, we also added /e/ as the definite marker which is an affix, to be able to compare two homophonous sounds with different morphological roles; thus, we have 5 environments here (4 clitics and 1 affix). Vowel Context (No. 2) consists of words which start with a vowel; all six Persian vowels can be used at the onset of a syllable. Thus, the 150 sentences were made combining 5 vowels (Vowel context No. 1) \* 5 Morphological Contexts (4 enclitics + 1 affix)\* and 6 vowels (Vowel Context No. 2). The speakers were asked to read each sentence loud and in their natural voice. The data were recorded in a soundproof room, at Alzahra Phonetics

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<sup>1</sup> Assistant Professor, Linguistics Department, Alzahra University (Corresponding author); [f.ghatreh@alzahra.ac.ir](mailto:f.ghatreh@alzahra.ac.ir)

<sup>2</sup> PhD Student of Linguistics, Alzahra University; [m.asiaee@alzahra.ac.ir](mailto:m.asiaee@alzahra.ac.ir)

<sup>3</sup> PhD Student of Linguistics, Bu Ali Sina University; [s.rahandaz@ltr.basu.ac.ir](mailto:s.rahandaz@ltr.basu.ac.ir)

Laboratory. After doing the segmentation of the recorded voices, we analyzed them acoustically using PRAAT 6.0.19. The statistical analysis of the results was done by SPSS version 21. To test our hypothesis that the type of enclitic has an effect on the occurrence the hiatus, we examined two homophonous enclitics: /o/ as the conjunction marker and /o/ as the short form of ra which is an object marker in Persian. A chi-square test was performed to examine the relation between the type of enclitics and occurrence of hiatus. The relationship between these variables was significant,  $X^2(1, N = 600) = 4.275, p < .05$ . Based on the result of the study, hiatus will occur more if the enclitic is /o/ as the short form of “ra”  $\phi = .84, p < .05$ .

We also studied two other homophonous elements with two different morphological categories: one is /e/ as the genitive case marker which is an enclitic; the other, is /e/ as the definitive marker which is an affix. Comparing these two morphologically different elements give us the opportunity to see how effective the morphological categories of elements are in the occurrence of hiatus. A chi-square test was done to investigate the relation between the type of morphological elements and occurrence of hiatus. The relationship between these variables was not significant in Vowel Context No. 1,  $X^2(1, N = 600) = 1.113, p < .05$ . However, the difference between these two morphological categories was significant in Vowel Context No. 2,  $X^2(1, N = 600) = 4.127, p < .05$ . Based on the result of the study, hiatus will occur more if the morphological element is the genitive case marker /e/,  $\phi = .83, p < .05$ .

Based on the results of the acoustic analysis of vocalic enclitics, we believe that VC pattern can also be postulated for Persian syllable structure. Moreover, in 55.73% of the occurrence of two vowels in adjacent syllables, no linking consonant was inserted. In the remaining 44.27% of the data, the type of consonants inserted inter-vocally was dependent on the phonetic and morphological conditions of the final vowel of the host word and the vocalic enclitic. Besides, the difference between the degrees of linking –consonant – insertion emphasizes the effect of morphological and phonological conditions of vocalic enclitics on the type and degree of occurrence of hiatus.

**Keywords:** Vocalic enclitics, Hiatus, Syllabification, Spoken Persian language, Morphological elements