

Persian Clitics in Virtual Networks

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Abstract—Today, almost everyone is a virtual network user. Currently, almost everything is done through the internet and social networks occupy a large part of this space. Meanwhile, the telegram network is an environment that allows people to do advertising, training, etc. at the highest speed. The study of clitics is an issue that has always been of interest to linguists. This article examines the Persian clitics in the telegram virtual network. The theoretical framework for conducting the research is Zwicky's classification (1977), and the data were collected by library method and analyzed by analytical method. The results of the research show that three types of simple, special and dependent clitics can be found in the studied corpus. These clitics, which prevent affixation, are used as an enclitic in Persian language. The findings include four types of simple clitics, two types of special clitics, and four types of dependent clitics, that each one has a different frequency. The results also indicate that the highest usage of the clitics is related to the dependent clitics and the lowest amount is related to the simple clitics in the whole corpus.

Index Terms—morphology, clitics, persian clitics, virtual networks

I. INTRODUCTION

Clitics are dependent morphemes that exist in almost every language in the world. They have both lexical features and some syntactic morpheme features. The study of clitics encompasses important branches of linguistics, such as word formation and syntax. For nearly two centuries linguists have been aware of the existence of clitics in the world's languages and they have largely recognized the difference between them and other linguistic components. However, the serious studies have been conducted in the late nineteenth and early twentieth century which among them researches of Wackernagel (1892) and Sapir (1930) can be mentioned.

In the last quarter of the twentieth century, linguists became increasingly interested in the distinctive features of clitics and efforts have been made to obtain objective criteria for distinguishing them from affixes and words. Zwicky (1985) offers several criteria for distinguishing the word from the clitics. His criteria indicate that in general, compared to words, clitics use similar features of affixes (especially inflectional affixes). The study of the clitics is one of the most important topics in linguistics because on the one hand it is related to the syntax and on the other hand to the morphology and this duality is itself a sign of the importance of this issue. The subject of this article is very important for those involved in linguistics and language teaching, researchers, linguistics students, and even the general Persian language users. Another issue is the need to investigate this topic in cyberspace, because, today, almost everyone uses social networks.

Currently, most things are done with the internet to speed things up and prevent repetition and error and save time and social networks also cover a large part of this space. Among them, the telegram network is the environment that provides the highest level of advertising, education, medicine and so on to human beings. Therefore, the study of their application in telegram can be considered. So, in this article, we intend to study the Persian clitics and its types in the texts available in telegram and answer the following questions: Can the Zwicky's classification of clitics (simple, special, dependent) be found in Persian telegram messages? And if so, which type is more used? To do the research, we selected the data from the Persian texts of the telegram messages. We collected 300 messages by using the library method and performed the research in an analytical method.

II. REVIEW OF THE RELEVANT STUDIES

In the early eighteenth century, Klavans (1982) states that J. Herman used the Greek word (Klino), which means "leaning and bending," to make enclitic and proclitic words and after that, the word "clitic" is used for such elements (p. 7). In linguistic texts, Sapir (1930), Bloomfield (1933), Nida (1963), Matthews (1989), Hudson (1986), Robins (1989), Comrie (1981) have studied the clitics and the topics related to the clitic making in different languages, and then have presented various subjects about them.

In Pashto, if an element which has stress comes before the verb of the sentence, the clitic comes after this structure (TEGEY, 1975, p. 132). Talman (2017) has studied the clitics in Jacobo language. He has been collecting and reviewing data for five years and believes that the clitics in this language are mostly seen in a simple and enclitic form. Verbal and adverbial proclitics appear as dependent morphemes and suffixed phrases. He shows that clitic usage occurs in this

language following a specific syntactic structure and a rich morphology construction. From the perspective of where they connected, the clitics are divided into two groups: enclitic and proclitic (Haspelmath, 2002).

Booij (2005) states that the clitic pronouns in the Italian language are used before the host word therefore, they are called proclitic (p. 166). According to the Booij, the clitics are used after their host word in the infinitive and imperative forms of verb, and so they are called enclitic. Clitics are similar to affixes in that they are phonologically dependent on a host. In this sense, proclitics act as prefixes, and enclitics act as suffixes. But the important point is that, there is not always a one-to-one relationship between lexical-syntactic and phonological features of words. One of the main reasons for this discrepancy between lexical-syntactic and phonological structures is the existence of the clitics and therefore, the study of clitics is also a study of the interference of lexical-syntactic and phonological structures.

Bonet (2019) studied about clitics and clitic clusters in morphology. She showed the distinction between simple clitics and special clitics in her work. She indicated that simple clitics often have a non-clitic variant and appear in the expected syntactic position. Bonet illustrated that special clitics usually appear in a position such as the sentence or in the noun phrases or in the determiner phrases. Arosio and Giustolisi (2019) is another study which has been done on agreement and interference in direct object clitic Production in Italian monolingual children. Also, Vender et.al (2018) did a research about the production of clitic pronouns. They studied this topic on bilingual and monolingual dyslexic children. They analyzed the performance of the children in a clitic elicitation task. Results of their study showed that these monolingual and bilingual dyslexic children, performed worse than control group especially in the simple present tense and in the present perfect tense. The result in general indicated that clitic production is a challenging issue for dyslexic children, so that they are not able to produce certain correct grammatical tenses.

III. THEORETICAL FRAMEWORK

Klavans (1985) argues that, it is possible to provide a single theory about the clitics. However, special distinctions must be made in this regard. These distinctions are parameters which can show the similarities and differences of the clitic system in different languages. Klavans argues that the clitics are lexical elements which have their own lexical-syntactic and lexical-phonological characteristics that include syntactic categories as well as sub-categories and believes that the definition based on the framework proposed by Liber (1980) does not distinguish clitics from words or affixes. Klavans claims that what separates clitics from words or affixes is that, clitics are usually attached to the group syntactically and this is the group that is the realm of clitics function. From this point of view, a clitic is different from an affix that is added to the word class. That's why Klavans uses the term "group affix" to refer to clitics.

Booij (2005) considers the clitics as small words that rely on the host word used before or after them, such as pronouns and articles, and cannot be considered as phonological words alone (p. 166-168). Then he cites Italian as an example, in which those lexical morphemes, must have at least two syllables (of course, there are exceptions in this language). But most pronouns in this language are monosyllable. Therefore, these pronouns act as clitics and they choose their side word as host and they bring prosodic constituent with that word. According to Spencer (1991), clitics are usually made up of complete words historically and sometimes they turn into inflectional affixes (p. 350). Haspelmath (2002) considers freedom of movement as one of the main and distinctive features of clitics from affixes; this means that clitics can be used in different places in a sentence. Anderson (1992) considers special clitics to be a group affix and classifies them into two groups, derivational and inflectional. He believes that auxiliary verbs, grammatical tense, pronouns, possessive markers, nominal dependencies can be considered as examples of inflectional clitics.

Zwicky (1977) and Pullum and Zwicky (1983) divide clitics into three categories: simple clitics and special and dependent clitics. In addition to the abbreviated and dependent form, simple clitics also have a complete vocabulary. The simple clitics 's' and 've' are used in the same syntactic position as their full forms and they have exactly the same syntactic role. He only recognizes the difference between simple clitics and full clitics in the sense that, simple clitics must be phonologically connected to the host.

In English, simple clitics lack word accent; because they have no vowel. Therefore, when they connect to host words, post-lexical phonetic rules are applied. After applying these rules, clitics can be pronounced as a stress less part of a larger phonetic structure which are called clitic group. Special clitics are in supplementary distribution with their full form. In each context, a form is used that is no longer used in the other context. Dependent clitics do not have complete lexical forms and they are only added in the form of clitics which dependent to host words; like possessive sign ('s) in English which lacks a complete form.

IV. DATA ANALYSIS

In this section, we study on the collected data and its clitics. We identify and separate the clitics in the selected texts and examine the types and frequency of occurrence of each of them according to the Zwicky classification (1977).

A. Simple Clitics

1- Enclitic form -æm instead of hæm

1) /emsal hæm doye in kara ro ænjam dade væ ketabešæm kolli foruš dašte/

(This year, she did both, and her book sold well.)

2) /soʔal tekrariye unqædræm tæxmine dəqiqi nemide/

(The question is repetitive. It doesn't give an exact estimate.)

In formal style of Persian language, hæm is used as an increase adverb. But in colloquial Persian, the abbreviated form (its clitic form) æm is used. According to the Zwicky's classification (1977), this clitic, is a simple one and as you can see, it is used in sentences which are informal. According to Zwicky, this clitic is an optional clitic in Persian. In sentence number 1) we can also express æm in (ketabešæm) as hæm in ketabeš hæm and in example 2) instead of æm in (unqædræm), hæm is also used. This clitic is a complete form of the clitic æm. As a result, because the complete form of it exists, it falls into the category of simple clitics. Another thing to note is that both abbreviated and complete forms of this clitic can be used in the same sentences and contexts. So, they are not in complementary distribution. This clitic occurs only after the host word, it is clear from the examples provided and their structure. Therefore, the clitic æm is an enclitic.

2- Enclitic form -o instead of ra

3) /lotfæn mæno bebæxšid/

(Please forgive me.)

4) /in toyi ke bayæd çešmato baz koniyo dorost entexab koni/

(This is you that have to open your eyes and choose the right one.)

In Persian, the sign of the object ra is used in sentences that have the object. In the above examples, the clitic o is an abbreviated form that often is found in colloquial speech and informal texts. According to Zwicky (1977), this clitic belongs to the group of simple clitics. Because, there is a complete form of this clitic, that is, the accusative sign ra. The reason that this clitic is simple can also be deduced from its optional nature. As you can see, in the examples we can also use the full form ra instead of the clitic. It is noteworthy that we also see this clitic in the examples after the host word. As a result, it is considered a kind of enclitic. Also, both complete and abbreviated forms of this clitic have the same and equal distribution and so they are not in the complementary distribution.

3- Enclitic form -o instead of conjunction væ

5) /sælām ketabe amuzešiyæ ændroydo ʔava ægær kæsi dare lotfæn befreste/

(Hello, if anyone has an Android and Java training book, please send it.)

6) /doktore daxeli beræm ya qælbo oruq behtære/

(Should I be visited by the internist doctor or Cardiologist?)

7) /tæze dæmo dæstga hæm nemixad/

(It doesn't just want a device.)

This clitic is also simple and there is a complete form of it (conjunction væ) in Persian. You can also use each one optionally, i.e. the full and abbreviated form, in sentences and finally, we can point out that this clitic is an enclitic; because it is used after the host word.

4- Enclitic verbs

8) /ægær bær in baværi ke sæng bæræyæt moʔjeze mikonæd moʔjeze rox xahæd dad/

(A miracle will happen if you believe that the stone make miracles for you!)

9) /zibatærin hekmæte dusti be yade hæm budæne/

(The most beautiful wisdom of friendship is to remember each other.)

Enclitic verbs are the present tenses of the verb "to be", which appear as an enclitic form. These verbs have complete form too. For example, in sample (8), the clitic I; is exactly equivalent to the full form of the verb hasti, that is, the second person singular of infinitive form of the verb "to be". The use of this type of clitic is also optional. Therefore, they fall into the category of simple clitics.

B. Special Clitics

1- Enclitic pronouns (possessive and accusative)

In this section, each time, we specify only the possessive and accusative clitics and explain about them. Therefore, other types of clitics may be used in the following examples, but they are not separated and are not discussed here.

10) /be næzæræm adæm ba royahaš zendæst /

(I think man is alive with his dreams.)

11) /royahat ro zendegi kon risk kon çon zendegi hæmin ælʔan dare etefaq miyofte /

(Live your dreams, take risks, because life is happening right now.)

12) /xordeš væ bæd bæqiyæš ro ændaxt sætl ašqal /

(He ate it and then threw the rest in the trash.)

13) /modam ba tævæqoʔatemæn zendegi mikonim /

(We constantly live with our expectations.)

14) /gahi xodetan ra be qædæm zædæn væ morure xaterat dæʔvæt konid /

(Sometimes invite yourself to walk and review good memories.)

15) /xuban daʔemiyændo mandegar mehrešan xales æst /

(Good-natured people are permanent and lasting, their love is pure.)

In Example 10, both clitics are possessive. The first clitic refers to the first person singular and the next to the third person singular. In example 12, the first is the accusative clitic and the second is the possessive and both are the third person singular. They are all special clitics. According to the Zwicky's classification (1977), special clitics either do not have a complete form or, if they have a complete form, do not have the same and equal distribution, that is, their distribution is not entirely consistent with each other and they are in complementary distribution. This means that in any case, the enclitic pronoun must be used in its context, whether the clitic or the complete form, and it is not possible to choose it voluntarily in all contexts and sentences.

C. Dependent Clitics

1- Indefinite clitic -i

16) /mæqz tæʔæsobe ʔæjibi bəraye xaterate bəd darəd ke be ʔonvane yek mekanisme defaʔi dər ʔəhæte bæqə məhsob mišəvəd /

(The brain has a strange bias for bad memories, which is considered a defense mechanism for survival.)

17) /bəstegi be qaziye pərvənde darəd ke čə hokmi əz in ʔəhæt bəraye qatel sader konəd /

(It is up to the judge of the case to issue a verdict in this regard for the killer.)

18) /mæqaleʔi nevešteʔəm be zəbane engelisi ʔəhæte eraʔe dər nəšriyeye elmi pəʔuħešiye xareʔi və nəməyeye ay es si dər zəmineye ʔomran /

(I have written an article in English for presentation in a foreign scientific-research journal and ISC index in the field of civil engineering.)

The clitic (indefinite -i) can also be considered a dependent clitic. That is due to the fact that they do not have a complete form and are dependent on the host obligatorily. Indefinite -i indicates the unknown names (indefinite nouns) and its host words. As written in Example 17) /bəstegi be qaziye pərvənde darəd ke čə hokmi əz in ʔəhæt bəraye qatel sader konəd /, the type of the verdict is not clear. In fact, it is unknown. Another type of indefinite i, known as vahdat-i, exists in Persian which means being one. It indicates "1" of the nouns. For example 18) /mæqaleʔi nevešteʔəm be zəbane engelisi ʔəhæte eraʔe dər nəšriyeye elmi pəʔuħešiye xareʔi və nəməyeye ay es si dər zəmineye ʔomran / which mæqaleʔi means 1 article. This clitic is also a type of enclitics because it is placed after the host word.

2- Indefinite relative clitic -i

19) /mowzħayi ke daraye lækehaye qəhvəʔi əmma saqeye səbz hæstənd məʔmulan teye fərayəndħaye šiimiayi reside šodeʔənd /

(Bananas that have brown spots but green stems are usually ripe during chemical processes.)

20) /məbahəsi ke ma əlʔan dər danešgah dərgirešim ba məbahese konkur motefavet hæst /

(The topics we are discussing at the university now are different from the topics in the entrance exam.)

21) /tənasobe əndam məsiri hæst ke bəraye šoruʔe zendegiye behtər aqaz mikonim /

(Fitness is the way we start to live a better life.)

According to Zwicky's classification (1977) indefinite relative clitic -i is also a dependent clitic. Because it doesn't have a complete form like indefinite i clitic. Also, because it is obligatory, there is no need to consider complementary distribution for this case. This clitic is always used in Persian relative clauses, and for this reason, is also called relative -i. It is attached to the head noun, and after the noun is mentioned with the indefinite relative clitic -i, the description of that noun or noun group is expressed in the relative clause. As you can see in the examples, this clitic is also after the host word and before the conjunction. Examples 19) to 21) indicate this point. In example 21) this clitic has been mentioned between noun and verb.

3- The ezafe kasre clitic e

22) /sistem hengame entexabe rešte xəta mide bayəd čikar konəm mige dər səbte etelaʔate šoma moškeli piš aməde /

(The system shows an error when choosing a subject. What should I do? It says there is a problem registering your information.)

23) /bebəxšid bəraye amargiri əz sait čikar konəm /

(Excuse me, what can I do to get statistics from the site? Should I use analytics tools?)

One of the clitics that we use in all noun groups, verb groups and etc., without any grammatical or syntactic constraints, is the clitic e. According to Zwicky (1977), this clitic is also a subset of dependent clitics, because there is no complete form of it. For this reason, like other dependent clitics, it does not include the study of complementary distribution. As can be seen in the examples, this clitic added to the final letter of the host words in formal and informal speeches to make them readable. This shows that this clitic is enclitic and is used to link words to each other. This clitic is commonly used in both additional and descriptive compounds and as assumed, this clitic is often used in Persian sentences.

4-vocative clitic -a

24) /xodaya fəqəət to ma ra kefayət əst /

(God, only you are enough for us!)

This clitic is only added to noun groups and it is not widely used in Persian, except for a few specific words such as *xodaya*, which can be seen in the example above, and in the present study, it has been used in only 2 cases. This clitic can be seen more in literary texts and poems. Vocative clitic *-a* usually comes after the head of the noun groups.

TABLE I
PERSIAN CLITICS IN VIRTUAL NETWORKS BASED ON ZWICKY'S CLASSIFICATION

Persian clitics									
telegram environment	Simple clitics				Special clitics	Dependent clitics			
	enclitic form -æm instead of hæm	enclitic form -o instead of ra	enclitic form -o instead of conjunction væ	enclitic verbs	enclitic pronouns (possessive and accusative)	indefinite clitic -i	indefinite relative clitic -i	The ezafe kasre clitic e	vocative clitic -a
number	15	12	16	140	252	84	95	1600	2
Total	183				252	1781			
percent	8.26				11.37	80.37			

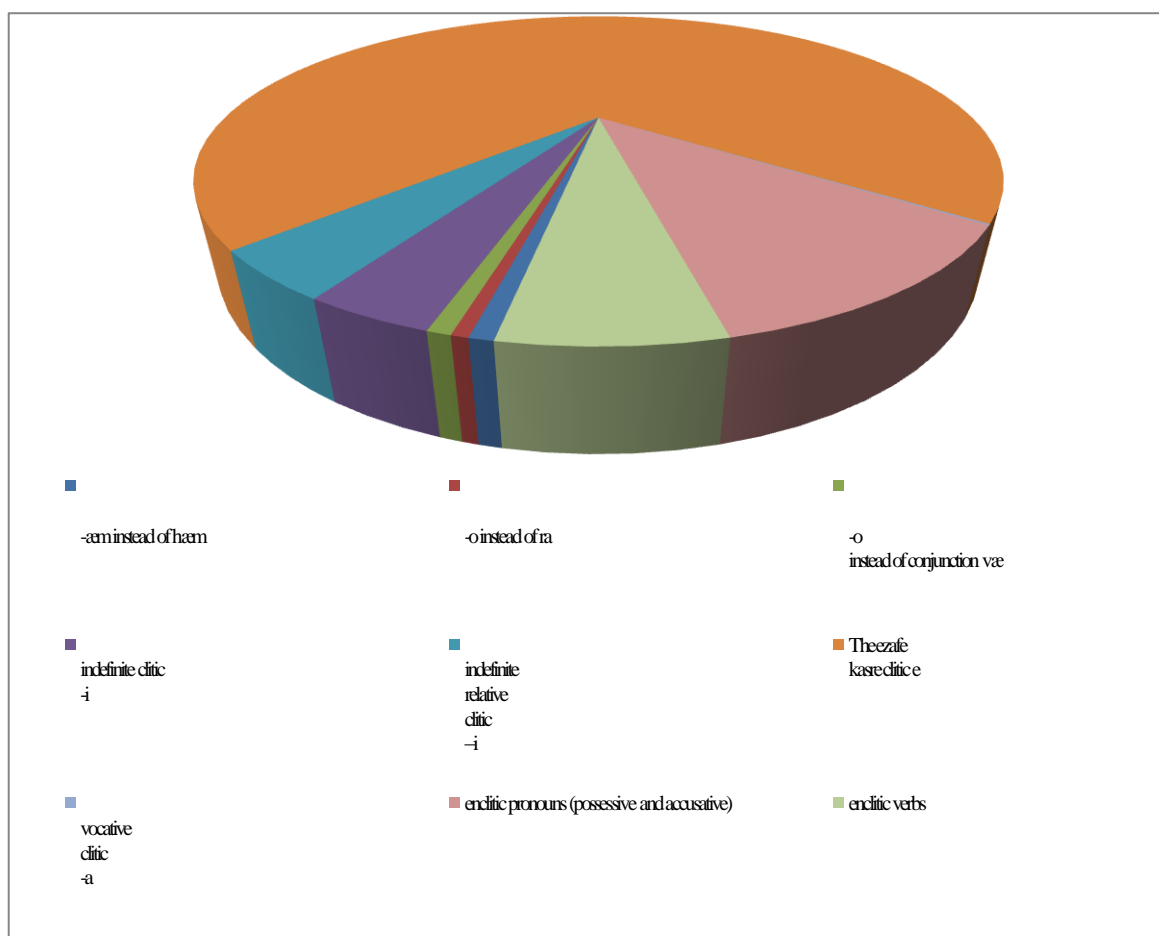


Figure 1. Frequency distribution of clitics in the whole corpus

V. CONCLUSION

The present study examined the Persian clitics in the telegram virtual network and studied the types of clitics and the frequency of their occurrence based on Zwicky's classification (1977). The results of the study showed that the Zwicky's triple classification of the clitic corresponds to the Persian language. Based on the data analysis, it was determined that all three types of simple, special and dependent clitics exist in Persian and can be separated. Types and frequency of clitic occurrence can be seen in Table 1. It is worth mentioning that in Persian, there are two clitics (definite maker clitic *-e / -he*) and (emphasis *-a / -ha*) that were not seen in the studied samples. In this study, among the types of clitics examined, the most frequency occurrences were belonged to dependent clitics, with 80.3%. However, simple clitics with 8.2% had the lowest number of clitics in the whole corpus.

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