Analogy and Some Case Studies in the Historical Study of Iranian Languages: With Emphasis on Persian

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Abstract—Generally, the historical changes of human languages depend on linguistic and metalinguistic factors. The linguistic changes are, themselves, divided into two subgroups: 1. the changes which are the outcomes of the phonological, grammatical, and semantic rules of a given language; 2. the changes which are the results of *analogy*. This article concentrates on the analogical changes which are, themselves, some kinds of imitation with varying degrees happening based on the principle of economy of language. The article investigates the issue in the two separate sections as follows: a. the theoretical discussion on analogy, which is mostly in accordance with Chapter 10 of *Introduction to Historical Linguistics* (Arlotto, 1981); b. examples of analogy in the historical changes of Iranian languages (with emphasis on Persian). The results for these two sections show that analogy stresses on such phenomena as regularity and irregularity, majority and minority, productivity and sterility, centrality and marginality, and generalization in world languages, including Iranian languages.

Index Terms—diachronic changes of languages, analogy, Kurylowicz's six Laws, Iranian languages

I. INTRODUCTION

The students of different branches of Linguistics and some other enthusiasts of the field of diachronic study of languages, are interested in linguistic universals. In other words, all languages experience changes through time. The reasons for the changes depend generally on *linguistic* and *metalinguistic* factors. The linguistic factors are totally relevant to the processes special to that language including phonological, morphological, syntactic, and semantic ones; while the metalinguistic factors are related to the relationship between language and such factors as art, society, culture, history, geography, politics, religion, etc. The changes in linguistic processes are of two kinds: **1.** the changes which are the results of the sheer phonological, grammatical, and semantic rules in a certain language; **2.** the changes which are the results of analogy. The article focuses on the second type.

Analogy was superficially been discussed in chapter 10 of *Introduction to Historical Linguistics* by Anthony Arlotto (1994)[1]. There are provided some examples from some modern and extinct languages, but the Iranian languages were not convincingly exemplified in the mentioned book. Some examples of analogical process in Iranian languages are provided in the present article since analogy enjoys a special status in the diachronic study of Iranian languages. Among the Iranian languages, Persian was deemed as the best language out of which to give examples, since documentary sources are available from all historical periods of Persian, i.e. Old, Middle, and New Periods.

Analogical changes can be found in Iranian languages in abundance. Analogy mostly occurs in affixes and stems, and to some extent, even in syntactic structures. A number of 12 cases of analogy in Iranian languages are presented in this article.

II. METHODOLOGY

The present research investigates the second type of linguistic changes, i.e. *analogy* in the course of historical changes of Iranian languages focusing on Persian. This is a comprehensive issue, so the paper is limited to two topics as the following:

A) Theoretical discussion on *analogy* in linguistics – focusing on the issues in Arlotto's work;

B) Presenting a number of 12 cases of analogy in the course of historical changes of Iranian languages – focusing on Persian language changes.

III. ANALYSIS

Analogy is actually a type of similarity and imitation of varying degrees which linguistic elements show due to economy of language (the principal of least effort). The related issues are mainly regularity and irregularity, majority and minority, productivity and sterility, and centrality and marginality; the ones based on which the examples are provided.

Regarding regularity and irregularity, a group of linguists called neo-grammarians founded a new school of linguistics in Leipzig, Germany, in the last decades of the 19th century [(2)]. Later on, their theories heavily influenced the historical studies of languages. The most important of all was the theory claiming that linguistic changes follow rules of their own and diachronic linguistics does not consider *scientific* what is called today as 'irregularity'. According to this theory, the linguistic elements which are considered as *irregular* at present, are in fact regular and there is no exception. We consider them *irregular* only because we do not detect their historical patterns which are the results of historical changes, such as irregular verbs in English and other languages. Synchronic study considers them irregular, but if they are studied diachronically, it is to be found that all of them are rule-governed and their rules are scientifically definable.

Theoretical Analysis on Analogy in Linguistics (Focusing on Arlotto's Work)

     A.   An introduction to analogy

Looking at the structures of languages, one finds that in all languages some structures are not in agreement with other structures which are mostly in the *majority* and they are considered as *regular*. These different structures which are in the minority, are considered *irregular* and unusual. In current English, for instance, which is itself a remnant of Old and Middle English, there might be more than a thousand regular verbs changing from present into past tense or past participle by adding the inflectional suffix *-ed.* However, only about 150 irregular verbs are frequent; see (Azabdaftari, 2002: pp. 416-22)[(3)].

Regarding the information above, regular verbs are in the majority in English. Based on the theory of analogy, the probability that many irregular verbs tend to make themselves similar to the regular ones in order to avoid looking incongruous, is much more than that of a case where the former tend to make themselves similar to the irregular verbs which are in the minority.

According to the fore mentioned issues, in analogy each language tends to make its irregular and unusual forms *regular, uniform and similar*. In figurative terms, each language gets tired of its irregularities, trying to get rid of them. The best and the simplest definition of analogy might be what Arlotto (1994) provides as: *it is a process by which a form in a language becomes similar to another form which is somehow related to it*; linguistic forms can be similar by various degrees, and a number of different relationships might cause such similarities; however, a generalization can be made about the analogical process as it causes the irregular and unusual forms to disappear. Following the definition for analogy, one can say that languages attempts to decrease different distinctions and replace the significant distinctions with the marginal ones.

Most of the structural rules of languages have irregularities or the so-called exceptions. There is no rule applying 100% to all the members of its related set; therefore, because of irregularities, analogy is always at work in all languages. There is the possibility that analogy is not understandable in the short run, but when it produces cumulative effect and reaches a certain point in number, the effect is discernible[(4)].

     B.   Analogical procedure

Regarding the procedure of analogy, Arlotto maintains that the functions of analogy do not establish any new form or category in a language, rather they expand or generalize the existing forms (1994, p. 179). As such, analogy makes no substantial change in linguistic rules, but it tries to reduce the different linguistic forms – some of which possibly deemed irregular – belonging to a certain category and incorporate them as much as possible in a certain inflectional set. In Modern English, for instance, the plural-making rule is applied by adding the inflectional suffix *-s/-es* to most of the nouns. The resulting structure is considered the most regular one for making plural nouns in English. In other words, making plural nouns by adding the suffix *–s/-es* is the exclusive rule of plural-making in English which forces other forms to comply with it. However, there are still nouns which do not obey the rule including *sheep/sheep, child/children, man/men*, etc.; See (Frank, 1993, pp. 12-13) for a number of such nouns. Because the number of such nouns is in the minority compared to the nouns being made plural by adding the suffix *–s/-es*, one can guess that many of them join the major group in the future due to analogical process, adopting the suffix *–s/-es* for their plural forms, while the reverse is improbable, maybe impossible. On the other hand, it is likely that no new noun will be formed in or borrowed into English made plural by analogy with *child>children* using the suffix *-ren* since this structure is in the minority in English compared to the nouns made plural by adding *–s/-es*, and the new and borrowed nouns tend to make themselves similar to the major rather than to the minor group in order to avoid looking incongruous.

In analogy, the given language does not affect all the irregular categories at once to change irregular structures to regular ones, rather it affects those irregular structures which are most suitable to become regular, and then it gradually changes the other less appropriate ones in order of priority. Looking at about 150 New English irregular verbs, for instance, a number of 16 verbs have tended to be regular whose list is provided by Azabdaftari (2002, pp. 416- 20).

New analogically-made forms likely occur in non-standard speech at first, finding their ways gradually into the standard speech and writing after they are accepted by the majority of linguistic community. However, the purists of language react against these analogical forms, not accepting them initially, but they accept the forms later since analogy is an unavoidable natural phenomenon in linguistic change process. For an introduction to analogy, Arlotto finds Yerzy Kurylowicz's paper the best source in which Kurylowicz tries to formulate '*Six Laws of Analogy*' to establish order and develop criteria necessary in analogical procedures. These six laws are briefly explained with some alterations to clarify the points; See (Arlotto, 1994, pp. 185-194) for more explanation and examples.

Regarding the first law, which somehow covers the sixth one also, Kurylowicz says 'one cannot be sure when analogy is applied, but if it is applied, it would be in accordance with one of the pre-existing rules of that certain language'.

His second law asserts that 'the direction of analogic process is from the basic form toward the subordinate form'. For example, the singular forms of nouns and present tense verbs in English are considered *basic* forms and the plural forms of nouns and past and perfect tenses are derived by adding indicators containing further information, and they are considered subordinate forms. In fact, a type of markedness occurs within this rule.

The third law is somehow related to the second one, stating that 'the two elements changing the basic form to the derivational form, should be related to each other through a productive inflectional process', for example, *-s* in contemporary English is a productive plural-making suffix, making large number of basic forms plural, while such a suffix as *-ren* makes only a noun such as *child* plural, and affects only one or a few words due to lack of productiveness.

Regarding the fourth law, Kurylowicz argues about the result of analogical process: 'when a new analogical form is accepted in a language, it takes the main role of the earlier form; and if the irregular old form is preserved, its use is limited to the secondary concepts or functions'. The word *old* in contemporary English, for example, has two comparative adjective forms *elder* and *older*, with the former being the original *old*, and non-analogical form has taken the secondary function in the phrases *elder brother* or *elder sister*, while the latter which is the analogical form, has taken the main role, conveying all the other concepts referring to someone or something possessing more age.

The fifth law is a response to the question of 'why some analogical processes are at work in a language and some are not when there is need for more than one analogical form?' His answer is that 'the language eliminates one or more secondary grammatical distinctions to restore a significant grammatical distinction'. It is a matter of discussion showing which distinction is significant and which one is secondary. For example, in many cases related to the historical evolution of Roman languages from Old Latin, the distinction between singularity and plurality for the subject and object is significant, while the vice versa case is considered secondary.

Analogy is much more common compared to stems in the expansion of grammatical morphemes, i.e. a morpheme having a certain grammatical function expands its scope of performance to other morphemes which had the same function in the past. In other words, a morpheme which had been more common and more irregular compared to others, has probably occupied the place of other morphemes of its own category, and has eliminated all of them such as the plural-making morpheme *-s* which has made many other plural-making morphemes similar to itself through the historical development of the English language. In fact, a speaker gets a sense of that dominant rule by which s/he makes generalization, considering the dominant rule as the exclusive (significant) rule of the category, and the other rules as marginal versions of that exclusive rule.

IV. ANALOGICAL RESULTS (ADVANTAGES & DISADVANTAGES)

A. Advantages

As analogy is a universal occurring phenomenon in all languages of the world, and by which many linguistic changes can be understood and justified, it has been found to have three benefits: linguistic reconstruction, etymology, and forming new words (neologism).

Contributing to the lost form reconstruction of the languages of the past – proto languages and non-poroto laguages – is a major benefit of analogy. For example, many non-existing eightfold inflected forms of Avestan nouns have been reconstructed using analogy; see (Abolghasemi, 1998, pp. 8-9). There are documents for the old basic forms of some Iranian languages whose need for restructuring is not so great, while Balochi language with a history of 2-3 thousand years which lacks sources from its ancient past, is in urgent need of restructuring, and resonstruction is implemented only through analogy.

The second benefit looks at the etymology of words. The researchers studying etymology need to be aware of etymological processes to scholarly do their tasks.

The third benefit which considers the formation of new words (neologism), is exemplified in the rules approved by Iran's Persian Language Academy to do neologism (about 16 rules). Tajvidi (2005, pp. 34-41), for instance, has assigned the fifth out of the 16 cases of word formations through analogy.

B. Disadvantages

Analogy might confuse researchers in reconstructing or etymological studies making them go astray since it is not based on linguistic rules. In this regard, Arlotto observes that in morpheme reconstructing, analogy might cause the researchers make mistakes since the basic forms which have somehow been irregular no longer exist, substituted for the analogically-made forms. This problem is solved if the basic (irregular) forms survive in some daughter languages. In the comparison of daughter languages, Arlotto states that the apparently-irregular forms which cannot be the results of analogical processes are paid special attention to restructure the mother language (1994, pp.194-195. Antoine Meillet approves this stating that "the irregular, unconventional forms observed in two languages are likely the most reliable reasons to prove the two languages are related (ibid, p. 195).

V. DISCUSSIONS: EXAMPLES (12 CASES)

Here, some analogical examples are studied based on the theoretical discussion above in the five inflectional categories of 1. Case, 2. Number, 3. Gender, 4. Tense, and 5. Grade. These categories can be briefly referred to as CNGTG; See (Ziahosseini, 1999, pp. 31-32) for more information on the functions of these inflectional categories.

What is meant by Case are the eight inflectional cases including nominative, genitive, vocative, accusative, dative, instrumental, ablative, and locative; Number includes singular, dual, and plural; Gender includes masculine, feminine, and neuter; Tense includes 1st person, 2nd person, and 3rd person singular and plural in different tenses; and Grade includes comparative and superlative.

V.1. Abolghasemi states that in ancient Iranian language, noun had eight inflectional cases including nominative, accusative, dative, genitive, ablative, locative, instrumental, and vocative which included Old Persian as well as Avestan (2005, p. 23). In Western Middle Iranian, noun is not inflected. It seems that in the period between the Old and Middle periods, noun was inflected in Western Middle Iranian having two cases: direct and oblique. Prepositions were used in Western Middle Iranian to show the oblique case, except genitive and vocative cases (ibid, p. 158) & (Amuzegar and Tafazzoli, 1994, pp. 56-57). The fact that the eight different inflectional forms changed into two inflectional forms in Western Middle Iranian, and into one form – in cases with preposition – in New Iranian, especially in Persian, indicates analogical process since a number of similar categories developed from multiplicity into unity and sameness. As a matter of fact, no new grammatical or semantic category has been created, rather some categories are eliminated and some are assimilated into one category. Apparently, the surviving form which has led the other forms making them identical to it, has enjoyed a more primary role compared to others. Therefore, this phenomenon is in agreement with Kurylowicz's fifth law stating that 'the language eliminates one or more secondary grammatical distinctions to restore a significant grammatical distinction'.

V.2. Some verb inflections which are markers of inflectional morphemes have undergone analogical process from Old through New Persian. for example verb inflections for 1st person singular in Old Persian have been at least in four forms based on being transitive or intransitive, and primary or secondary inflection: *-iy*, *-aiy*, *-m*, and *–miy*; see (Mowlayi, 2008, pp. 75-77). As Amuzegar and Tafazzoli state, the same inflection is realized with a slight difference as *-hom*, *-hēm*, *-am*, *-om*, and *-ēm* which are also 1st person plural inflections in Middle Persian (1994, pp. 64- 66). In New Persian, these four different forms have changed into only one form of *-am* for all tenses in standard Persian, such as miraw**am**/raft**am**/beraw**am**/rafte**am**. If one is to know that the current survived forms are the equivalents of which past forms, s/he needs to understand the historical development of deletion and assimilation as regards this Persian suffix. Apparently, this inflection, in the consonant form of *-m*, had been combined with a form of the verb *ah-* (= to be) in Middle Persian, changed into one of the fivefold Middle Persian cases, and then a form realized as *-am*, made other forms identical to itself. The fact that four different forms of Old Persian inflections changed into only one form in New Persian indicates analogical process at work since a number of forms of the same function have been reduced and identical to one form. As a matter of fact, no grammatical or semantic category has been formed through this process but some older categories are eliminated and some others are reduced into one category. It seems that the surviving form which has led the other forms making them identical to it, has been more frequent compared to others; therefore, this phenomenon is in line with Kurylowicz's third law stating that 'the two elements changing the basic form to the derivational form should be related to each other through a productive inflectional process'. Here, the form *-m* must have been more productive, more frequent than the others capable of leading them.

V.3. Grammatical number had been threefold in Old Persian: singular, dual and plural. Adjectives, pronouns and numbers agreed with their referents or nouns regarding the grammatical number. In Middle and new Persian dual nouns no longer exist. It seems that Persian has retained the categories 'one' (singular) and 'more than one' (plural) which were basic (central) categories, assimilating the dual number which meant 'more than one' (two) into the plural category by analogy, practically eliminating a linguistic rule due to marginality and using a plural verb for dual category to agree with the verb. Here, again, no new grammatical or semantic rule has been established, rather a category is eliminated or has combined into another. This is in line with Kurylowicz's fifth law asserting that 'the language eliminates one or more secondary grammatical distinctions to restore a significant grammatical distinction'. According to the above law, language never abandons singular and plural categories in favor of dual category because singular and plural categories are considered basic compared to the dual category which is deemed to be marginal compared to the two first[5].

V.4. Three grammatical genders masculine, feminine and neuter were assigned to noun in ancient Iranian languages, including Old Persian. Adjectives and pronouns, except personal pronouns, and numbers agreed with their referents or nouns in gender. In Middle and New Persian, gender inflection no longer exists but the gender traces are observable in male and female names. Today, because gender is not important in names, some names and even personal proper nouns, by analogy with many other feminine names, are used as feminine which were historically masculine, and vice versa. For example, 'Yasnā' is considered feminine today by analogy with such feminine names as 'Faribā', 'Hosnā', 'Zibā', 'Royā', 'Nakīsā', etc. (modern feminine names ending in *-ā*) although the name is adapted from 'yasna-', an important section of *Avesta*, being masculine in Avestan language. As another example, today among the names enlisted in the *Dictionary of Iranian Names*, the Iranian name 'Peymān' is considered masculine. It has been observed that the name 'Peymāne' is enlisted as the feminine counterpart for Peyman by analogy with the Arabic names which acquire the feminine-making '-e' marker in such personal names as Hamīd > Hamīde, Farīd > Farīde, Amīn > Amīne, etc. If one

diachronically studies a name such as 'Yasnā' in gender terms, it is not correct to consider it feminine, but s/he accepts synchronically that analogical process is applied and the name is currently used as feminine. Because this name is frequently used as feminine and most of the speakers consider it a feminine name, the majority (frequency) principle is applied to it, facing no linguistic prohibition since all linguistic layers gradually change; hence the word is changed in its gender.

V.5. In Old Persian, verb roots were appeared in a wide variety, allowed different suffixes depending on whether they ended in the vowel *-a* or a consonant; whether they were transitive, intransitive or contributed in passive structure formation; based on present, past continuous, past simple, and present perfect tenses; according to declarative, subjunctive, optative, injunctive and interrogative sentence structures; and finally depending on person and number; see (Mowlayi, 2008, pp. 65-85). Verb inflections abandoned many of these categories, moving toward the sameness in Middle Persian Period, such that inflections are only relevant for person and number, and do not reflect the effect of things such as the vowel *-a*, sentence structure, etc. In other words, many of these marginal categories are combined together, incorporating in themselves their more basic categories of person and number. With the reducing number of inflections, no new grammatical and semantic rule has been established; rather some categories are only eliminated or combined together, with the direction being from majority to minority. This is in line with Kurylowicz's fifth law stating 'the language eliminates one or more secondary grammatical distinctions to restore a significant grammatical distinction'. Here, person and number categories are basic (central) and such categories as root and sentence structure have been considered marginal and eliminated.

V.6. Mowlayi states that in Old Persian, the stem-making category of verb included the followings: 1) *a*-containing present tense stems and *a*-less present tense stems; 2) *s*-containing past tense stems and *s*-less past tense stems; 3)perfect stems; 4) passive stems (2008, pp. 68-69). These stem makers have been structurally more variant compared to later periods but in Middle Persian all these forms have been changed into two stem-maker forms of past and present tenses, as Amuzegar and Tafazzoli observe "verbs were made of two stems in the Pahlavi language: present and past tense stems. Present tense stem is used to make present and imperative verbs, and past tense verbs are made out of past stem which is equivalent to past participle; present stem is derived from ancient Iranian present stem and past stem is derived from ancient Iranian past participle" (1994, p. 64). In New Persian, these two stem makers have been remained unchanged. In this case, where at least four root making forms in Old Persian as well as the past participle form (a total of five forms) have changed into the two forms of present and past stems, no new grammatical or semantic rule is created; rather some categories are eliminated and some others have been combined into one category which again proves the application of Kurylowicz's fifth law which states that 'the language eliminates one or more secondary grammatical distinctions to restore a significant grammatical distinction'. Here, present and past tense stem making categories have been considered basic(= central) and preserved without considering *a*-containing and *a*-less and *s*-containing and *s*-less forms while such categories as perfect and passive stems have been considered marginal and have been eliminated.

V.7. In New Persian, the verbs whose past tense stems are formed by the addition of –īd, -t, and -d to their present stems are considered *regular* while those not following this rule are deemed *irregular*. Regarding regularity and irregularity of a linguistic element, Sadeghi states "a word is considered regular when the question of majority and analogy is brought up. A rule of majority is a norm and an origin, otherwise it is abnormal and irregular. Not only do the frequencies of these verbs indicate this, but the analogical changes in the past tense forms of some irregular verbs proves that" (2001, p.134). In a study on irregular verbs in some texts belonging to the 4th and 5th centuries AH, Sadeghi mentions 32 verbs deriving their past stems by analogically adding -īd the dominant suffix used by the majority, including sāzīdan instead of sāxtan: to make, oftīdan instead of oftādan: to fall, sūzīdan instead of sūxtan: to burn šokofīdan instead of šekoftan: to flourish, etc. He provides examples of the analogical change in Middle Persian (ibid. pp. 134-135) as well as those of the analogical process regarding the use of this suffix in today's Persian (ibid, pp. 136-137). In addition, in a paper as regards fake verbs, the effect of analogy has been clearly visible (ibid, pp. 143-152). Here, Kurylowicz's third law is somehow applied which claims 'the two elements changing the basic form to the derivational form should be related to each other through a productive inflectional process'. In this process, in fact, no new rule is presented; rather some categories led others since they were more productive, a role played by the suffix *-īd*.

V.8. The adjectives *meh, keh, beh, bīš, pīš,* and *afzūn* without comparative inflectional marker are the equivalents for the comparative adjectives with comparative inflectional marker *meh-tar:older, keh-tar:younger, beh-tar:better, bīš-tar:more, pīš-tar:earlier and afzūn-tar :more* respectively. These words are not considered *regular* since they are not made comparative by the main rule of adding *–tar* inflectional suffix. Obtaining the inflectional suffix *–tar,* these adjectives have, once again, been made comparative by analogy with other regular comparative structures which are in the majority. The *irregularity* is rooted in the history of these words. Abolghasemi states that there were two methods to make comparative adjectives in ancient Iranian language: a) the suffix *-yah* was added to the absolute form of the adjective; b) the suffix *-tara* was added to the absolute form of the adjective (2005, p. 24). In western Middle Iranian, the suffixes *-istar, -(ā)dar, -dar,* and *-tar* were used, all of which somehow being a remnant of the ancient *-tara*. In Middle Persian, the first type of these adjectives are realized in the forms of *mih*, *kih*, *wih*, *wēš*, *pēš* and *afzōn*, to which some suffixes used to make comparatives out of absolute form of adjectives were sometimes added for emphasis (ibid. pp. 160-161).

Looking at the historical change process of the theses adjectives, one can find that the analogical process has been applied on them since Middle Period, is reaching its maturity now. However, we need to know that not all these adjectives acquired the suffix *-tar* at once. One can infer that each of them being most suitable changed by analogy, leading gradually all the rest to change.

Kurylowicz's fourth law maintains that 'when a new analogical form is accepted in a language, it takes the main role of the word, and if the irregular old form is preserved, its use is limited to secondary concepts or functions'. Theses adjectives are two variants in New Persian language use. The new forms have the primary roles while the preserved forms of the past have the secondary function found only in literature, having no use in the normal standard speech; for example the words *keh* and *meh* are used in the following verse by Sa'di: "ze qaumī gar yekkī bīdāneši kard // na *keh* rā manzelat mānad na *meh* rā : If one man of a tribe shows folly of himself // maintain dignity neither of minors nor for majors ".

V.9. If we want to trace analogy in Old Iranian Languages, we had better refer to Avestan language since more resources are available from that language. As was said earlier, nouns, adjectives, pronouns and numbers had eight inflectional cases, three genders and three number types in the Old Iranian languages. The final phoneme of their stems has been important for this feature. One of the most frequently-used phonemes in stem endings has been *-a*. Since this is one of the most-frequently used and regular final stem phonemes in ancient Iranian languages, many of other final phonemes of stems tend to change into *-a*. In other words, many nouns and adjectives whose stems did not end in *-a*, were inflected like the ones ending in *-a*. Some noun stems which ended in *-a* in the Avestan language are daēva-, vira-, ahura-, yima-, haoma-, and yasna-, but some others which ended in phonemes other than *-a*, were inflected in certain cases like those ending in *-a*. for instance, the word *baēvar-* (the number 10000) was inflected in dative singular masculine case as *baēvarāi*, i.e. like those words ending in *–a*; (Jackson, 1892, p. 108). On the other hand, it is known that many numbers such as *aēva-, dva-, panča-, hapta-, ašta-, nava-, dasa-,* and *sata-* (1, 2, 5, 7, 8, 9, 10, and 100, respectively) were themselves ended in *-a*. It is likely that *baēvar-* tended to be inflected by analogy with such numbers.

One of the most common markers of present-tense-making stems in Avestan verb inflection, also, is the *-a*-ended stem. The importance of this stem ending is reflected in the fact that present tense roots are divided into two groups of *-a*-containing and *-a*-less, with the former group being called *-a*-thematic. In verb inflection in non-present tense (for example in past tense) also many verbs tend to be inflected the same as those ended in *-a*. For instance, the present tense stem in the 3rd person singular transitive past tense verb *janat* (hit, killed) is *jan-* with the weak form *ja-*. The components inside the word are: *jan+a+t* whose *-a* component is the factor making the word have *-a*-inflection tendency; See Rashed Mohassel (1985, p. 145) for more information on the case).

V.10. Abolghasemi states that the equivalent for the word '*pesar:son*' in New Persian is *pu ça-* in Old Persian which has changed to *pus* in Middle Persian. However, in Middle Persian the word *pusar* is also observed in which *-ar* is added to *pus* by analogy with the words '*duxt* and *duxtar:daughter*' (2005, p.71). The form changed in the word is in accordance with Kurylowicz's third law stating that 'the two elements changing the basic form to the derivational form should be in relation to each other through a productive inflectional process'. Here, the form *-ar* has changed *pus* to *pusar* and *pesar* in Middle and New Persian, respectively, through a productive inflectional process.

V.11. Mowlayi (2008) states that 1st person singular personal pronoun in Old Persian had bound and free forms in different inflections as follows: *adam, mām, manā, -mā, -maiy,* and *-ma* (p.56). Those six forms have changed to the four forms *an, az, man,* and *-m* in Middle Persian according to Amuzegar and Tafazzoli (1994, p.58). In today's Persian, i.e. New Persian, only the form *man* which is a survived Old Persian genitive case, and *-am* are used in free and bound forms, respectively, in exchange of all Old and Middle forms. Regarding such a case, one can guess that the genitive case was basic (central) compared to the other cases which were marginal. This is in accordance with Kurylowicz's fifth law.

V.12. Languages do not always apply analogy intralingually, but they do it interlingually as well. An analogical case is the use a language makes of derivational and inflectional affixes belonging to another language through borrowing process. For example, the adjective-making suffix *-ī* which is originally a suffix in Iranian Languages, can be added to a wealth of Arabic nouns borrowed into Persian making adjectives out of those Arabic nouns by the Persian adjective-making manner in words such as: *hesāb-ī, ketāb-ī, enšā-ī, ešteqāq-ī, rezā-ī,* etc. The addition of this suffix to Arabic words is not related to the characteristics these words have in Arabic, i.e. whether they are masculine or feminine, simple or derived, singular, dual or plural, etc.; rather, they have changed from nouns to adjectives by analogy with Iranian words – here Persian words – by obtaining the derivational suffix *-ī* although they are Arabic words. Some more examples of this phenomenon are provided in *The History of the Persian Language* , a work by Abolghasemi (2005). He has also mentioned a number of Persian words changed into Arabic by the Arabic adverb-making suffix called 'tanween' with the Arabic marker *-an*, includingn *nāčār-an, dowom-an, and gāh-an*. these words are originally Persian but they are made identical to their Arabic counterpart adverbs by analogy with such borrowed Arabic words such as *sarī-an, hatm-an, nesbat-an, mowaqqat-an*, etc; See (Abolghasemi, 2005: 268-72) for more examples on Arabic and Persian nouns plural-making, and making Persian and Arabic adjectives comparative and superlative by analogical process.

VI. CONCLUSIONS

The following conclusions have been obtained from the issues discussed in the paper:

- Analogy is a universal historical change among the world languages. There is an urgent need for paying attention to analogical processes in the historical study of Iranian languages since they are among the prominent ancient languages of the world.

- The main principles of analogy stress on the factors including regularity and irregularity, majority and minority, productivity and sterility, centrality and marginality, and generalization.

- Kurylowicz's sixfold laws are in accordance with the examples provided in the paper. The effect and accordance are observed in each of the 12 cases.

- The analogical direction from Old to New Period in Iranian languages has been from analytical to combined types; in other words, the language has combined some irregular nonstandard forms making them less in number.

- More examples can be analyzed by analogy with those provided and on the basis of the five inflectional characteristics including case, number, gender, tense and degree (comparative & superlative).

- Analogy can contribute to such processes as linguistic reconstruction, etymology, and linguistic predictions.

- Analogy is not always applied intralingually; it occurs interlingually as well.

NOTES:

(1) The complete study of this chapter is recommended for those who want to learn more about *analogy*.

(2) Scholars such as Hermann Grassmann, George Curtius, Berthold Delbrück, Karl Brugmann, and Hermann Osthoff are among the founders of this school (Hassandoust, 2004, pp. 14-15).

(3) The English language is traced back to the great Proto-Indo-European language family through Germanic branch. It seems that the current English irregular verb forms are the remnants of the past Middle and Old English or even Germanic.

(4) According to *linguistic dialectics*, if all rules were the same, language would be tired of regularity and homogeneity once more, and gradually makes changes and produces diversity due to its variable nature, distancing itself from homogeneity, uniformity and regularity.

(5) Arabic still has dual and present and absent (3rd person) categories. Based on what happened to other languages, one can predict that if analogy is applied someday, dual and absent will be eliminated while singular, plural, and present will survive, since these are among the significant distinctions.

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