

An Analysis of Persian Compound Nouns as Constructions

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Abstract

In Construction Morphology (CM), a compound is treated as a construction at the word level with a systematic correlation between its form and meaning, in the sense that any change in the form is accompanied by a change in the meaning. Compound words are coined by compounding templates which are called abstract schemas in CM. These abstract constructional schemas generalize over sets of existing compound words and specify how new compound words can be created. The schemas dominate the compounds so that they inherit all predictable morphological and semantic properties from these schemas. Also, CM adopts a paradigmatic approach to word formation, that is, the creation of new compound words is caused by the extension of a systematic form-meaning relationship in a set of existing compound words to new cases resulting in new compounds. Regarding these properties of CM, This paper studies Persian compound nouns in the framework of Construction Morphology. From this perspective, two types of compound nouns including endocentric and exocentric ones are treated in a rather similar way because the compound noun construction as a holistic schema plays the main role in specifying the syntactic features and semantic content of compound nouns, not their individual constituents. According to findings of this study, the analysis of Persian compound nouns based on CM increases the degree of generality in compound noun formation and develops the concept of holisticity in the form and meaning of compound nouns as well as it highlights the paradigmatic relationship in Persian compound noun formation templates.

Keywords: Constructional Schema, Construction, Systematic Correlation between Form and Meaning, Hierarchical Lexicon, Holisticity, Paradigmatic Relationship

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1. Introduction

Construction Morphology (CM), subsuming under Cognitive Grammar, as one of the main streams of Morphology in the 21st century is considered as a rather new approach to the study of words. Words are treated as signs with a systematic correlation between form and meaning, and they are morphologically and semantically viewed as holistic and unitary signs (Booij, 2005/2009/2010 and Goldberg, 2003). It seems that the holistic approach to word structure is in line with the basic idea of Lexeme-based Morphology (Aronoff, 1994) and A-morphus Morphology (Anderson, 1992) which don't treat words as concatenations of morphemes and do not assign additional structure to words respectively. What matters here is to recognize words as "Constructs" and to connect them in a network (conceptualization) of relationships in the lexicon. In addition, word formation processes are morphological schemas by which new words are coined, and these constructional schemas form part of a hierarchical lexicon which makes it possible to express sub-generalizations about sets of complex words without obliterating the properties they share with other complex words (Booij, 2010a, p. 11). The existence of the paradigmatic relations (with regard to abstract schemas) between complex words¹ (compound/derived words) sharing the same stem (or the same type of stem) in word formation templates (schemas) is one of the significant features of Construction Morphology.

¹A complex word is a word made up of more than one piece/morpheme, whether it be two or more stems (compound word) or a stem plus one or more affixes (Aronoff & Fudeman, 2005, p. 2, 236).

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Compounding is a type of lexeme formation that operates primarily at the level of syntactic categories, without reference to the [internal] morphological content of the construction (Aronoff, 1994, p. 16). Indeed, morphologically, a compound is a word made up of two or more separate lexemes (Lieber, 2009, p. 199). In this paper, the focus is on two main types of compound nouns (endocentric and exocentric compound nouns), and the method is to describe and analyze Persian compound nouns semantically and morphologically in terms of Construction Morphology by means of proposed schemas. Here, based on CM (Booij, 2009/2010) a compound noun is treated as a “construct” with a whole structure and unitary meaning. According to Booij (2010a), instead of speaking about word formation rules, we speak about word formation templates or schemas with a systematic correlation between form and meaning. Word formation patterns can thus be considered constructions at the word level and the individual complex words that instantiate these patterns are (morphological) constructs (ibid). From the semantic point of view, basically the meaning of the whole construction is not a compositional function of the meaning of the parts put together locally, but constructions themselves must have meanings (Lakoff, 1987). Of course, the meaning of many compound words is predictable from their parts, but the meaning of many words cannot be determined by their elements. The data in this article, are classified in terms of endocentricity and exocentricity of compound nouns. To treat the meaning of compound nouns consistently and equally, compound nouns are described from Langacker’ usage-based model (1987, 2000) which incorporates irregular patterns deviated from a natural way: a constructional schema can categorize even irregular patterns as an extensional instance from the prototype. Within this frame, the research question is how much the

constructional approach to studying Persian compound nouns leads to express more (explicit) generalizations in Persian compound noun formation.

Constructional Approach to the Analysis of Compounds

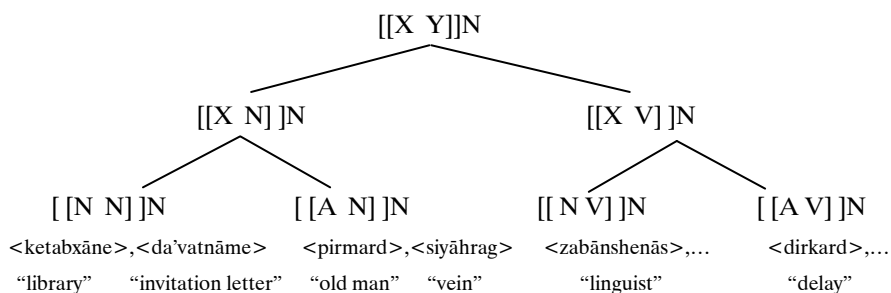
In construction morphology, a complex word is not treated in terms of “item and arrangement” model, but it is dealt with according to “item and process” model of morphology. Word formation processes are, indeed, schemas/templates which are inductively formed in learner’s mind during language learning; that is, according to German linguist Hermann Paul (1880), the language learner will start with learning individual words and word forms, but will gradually abstract away from the concrete words (s)he has learned, and coin new words and word forms according to abstract schemas. This enables the language user to be creative both in word formation and inflection. This tradition is continued in the paradigmatic approach to word formation (Schultnik, 1962; VanMarle, 1985) and in non-transformational generative grammars (Booij, 2010a, p. 2). In a constructionist approach to word formation, we may dispense with the notion of rule, which is an operation on a base, and focus rather on the output of word formation processes; morphological constructions allow us to deal with non-compositional aspects of meaning in word formation, e.g., in exocentric compounding (Arcodia, 2012, p. 394).

The schemas of word formation are general patterns which are dominating all existing complex words and they are the sources of new words. These new words (output of morphological operations) are instantiations of morphological schemas, and they inherit all predictable properties of schemas. The main property of CM is based on the paradigmatic relationships between morphological schemas; in other words, the morphological structure of complex words is identified based on their paradigmatic relationships with

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other complex words. These schemas form part of a hierarchical lexicon in which schemas dominate individual complex words. By default, complex words inherit the information specified in schemas, but a particular piece of information maybe overruled by an individual lexical item that instantiates a specific schema (Booij, 2010a, p. 6). In hierarchical lexicon, there are intermediate levels of generalizations. These are intermediate schemas in between the individual words and the most abstract word formation schemas, expressing generalizations about subsets of complex words of a certain type (Booij, 2005, quoted in Booij, 2007, p. 34). As a result, lexicon has a hierarchical organization containing all levels of constructions, the most abstract schemas, intermediate constructions and finally concrete lexical items.

Furthermore, as Booij believes, by making use of the notion ‘construction’ in syntax like morphology, an adequate treatment of both morphological and syntactic word combinations will be given generally (2009, p. 17). This fact makes the boundary between derivation and compounding blurred on the one hand and syntax and lexicon on the other hand. We assume such a diagram showing this hierarchy of compound nouns in Persian:



These constructions, according to Goldberg (2003, p. 219), are stored pairings of form and function/meaning, including morphemes, words, idioms, partially lexically filled and fully general linguistic patterns [idioms]. Any linguistic patterns recognized as constructions as long as some aspect of its form or

function is not strictly predictable from its component parts or from other constructions recognized to exist. In addition, many constructionist approaches argue that patterns are stored even if they are fully predictable as long as they occur with sufficient frequency. These approaches hypothesize that an account of the rich semantic, pragmatic and complex formal constraints on these patterns readily extends to more general, simple or regular patterns. This approach is unlike main stream generative grammar in which general principles play the main role in the analysis of all language structures.

In general, the following schema describes endocentric compounds (including a head) as constructions, whose right element is of the same category as the whole construction, as follows:

- 1) $[[A]_x [B]_y]_y$ 'Y_i with relation R to X' endocentric compounds

As Booij (2009, p. 201) declares:

“Schema (1) can be interpreted as the formal representation of a construction, that is, a particular structural configuration with a specific meaning correlate. The fact that the right constituent and the structure as a whole are dominated by the same syntactic category variable is the formal expression of the generalization that the syntactic category of the compound is determined by its right constituent. For instance, if *y*' has the value N, the compound as a whole is also an N. The relevant meaning correlate is that the right constituent functions as the semantic head of the compound, and that a semantic relation between the two constituents is invoked. The specific nature of that relation, however, is left unspecified in the schema, since it is not predictable on structural grounds.”

The second schema describes exocentric compound (without any head) as constructions:

- 2) $[[A]_x [B]_y]_z$ 'fixed idiomatic meaning' exocentric compounds

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Neither of the constituents of the compound is the head and the different indices *y* and *z* indicate that there is no identity between the category of the right constituent and the category of the whole compound (Booij, p. 212). In the above schemas, *A* and *B* stand for lexical items and *Y*, *X* and *Z* indicate syntactic categories like noun, verb, adjective/adverb. The index *i* refers to semantic relation/head. Here the whole construction determines the meaning and syntactic category.

Paradigmatic Word Formation

Every language applies various word formation processes/templates in order to create new lexical items to satisfy its needs in the language society. The existence of word formation pattern in a language fully guarantees its dynamics. In CM, these patterns are considered as general schemas dominating existing complex words and specifying how to create new ones (Booij, 2007, p. 34). The existence of a paradigmatic relationship between words means that the creation of new complex words is seen first and foremost as the extension of a systematic pattern of form-meaning relationships in a set of established words to new cases resulting in new words (Booij, 2005, pp. 9-10). So, by replacing one constituent like an affix or a verb stem in a set of analogous words (sharing a constituent/having the same structure) with another affix or verb stem in the same position, new words are coined. So, the replacive (substituting) relationship between schemas for coining new words and consequently between existing words and new ones is of great importance to word formation in CM.

According to Booij (2007, p. 36), word formation schemas are constructed by language users on the basis of paradigmatic relations between words, words being the lowest nodes of the trees in a hierarchical lexicon. If this is the case, we may also expect word formation schemas to be constructed on the basis of

the paradigmatic relationship between words that share their stem. This is indeed the case, and this is the phenomenon called paradigmatic word formation. The following is a series of examples in Dutch:

verb	deverbal noun	deverbal noun
arbeid 'to labour'	arbeid-ster 'female labourer'	arbeid-er 'labourer'
spreek 'to speak'	spreek-ster 'female speaker'	sprek-er 'speaker'
werk 'to work'	werk-ster 'charwoman'	werk-er 'worker'

Given the existence of paradigmatic relations between words, the language user may conclude that female agent nouns are formed by replacing the suffix *-er* of agent nouns with the suffix *-ster*. One reason for assuming that this is the correct analysis is that when a deverbal noun in *-er* has a particular semantic idiosyncrasy, this semantic property recurs in the corresponding female noun, as is illustrated by the following examples:

bet-wet-er 'lit. better knower, pedant'	bet-weet-ster 'female pedant'
oproer-kraai-er 'lit. revolutioncrower, ring leader'	oproer-kraai-ster 'female ring leader'
pad-vind-er 'lit. path finder, boy scout'	pad-vind-ster 'girl scout'

The words in the left column are nominal compounds of which the head is a deverbal noun. Note that the common semantic idiosyncrasy of these word pairs cannot be explained in terms of a common verbal base because Dutch does not have the verbs *betweten*, *oproerkraaien*, *padvinden* (ibid.).

2. Data Analysis in Persian

In Persian, compounding and derivation are considered as the important and productive processes of word formation (Tabatabaei, 1382, pp.117-118, 1376, pp.123, 133). The data in this article include dozens of Persian compound nouns grouped into endocentric and exocentric compounds. The first group

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contains synthetic compounds and partially lexically filled constructions and the second one are exocentric compounds:

Endocentric Compounds (Synthetic compounds):

Endocentric compounds are a subset of compounds which has a head, and the head expresses the core meaning of the compound, and it belongs to the same lexical category as the compound as a whole (Aronoff & Fudeman, 2005, p. 108). In fact, Endocentric compounds are compounds in which one element functions as the head (Spencer, 1991, p. 310). Here, the endocentric compounds are divided into four types: columns A, B, C, D. The first column includes those compounds which end in “ande” and the data in the second column have no obvious suffix (zero morpheme). The data in columns C and D are action nouns with suffixes “i” and “ān” respectively:

A)

Tekāndahande “shocking”

gul zanande “deceiving”

ārāmesh dahande “soothing”

tahiye konande “producer”

yād girande “learner”

gerd āvarande “compiler”

tangjavande “tightening”

B)

āqebat andish “foresightful”

dānesh āmuz “student”

hasti baxsh “creator”

ghodrat talab “seeking for power”

moshkel goshā “trouble –shooter”

zabānshenas “linguist”

ta’sir gozār “effective”

These words represent some samples of a large increasing number of compound nouns (derived compounds) in Persian because compounding and derivation are highly productive word formation templates in this language. Here, the constructional approach is applied to the analysis of such words in order for us to express the degree of the applicability of this cognitive method in Persian morphology. In the analysis of the first group, synthetic compounds, there are

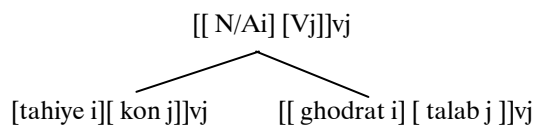
four subsets consisting of agentives which ends in the suffix “ande” (column A) and traditional zero morph “Ø” (column B), action nouns ending in yaye masdari “i” (referring to action) and “ān” (in the next pages, columns C and D respectively). The suffixes “i” and “ān” in Persian compound nouns denote verbal/action meaning. Booij (2005, p. 214) introduces a cross-linguistically very common form as “action nominalization” in which verbal constructions are deverbalized and acquire a noun-like behavior. Therefore, deverbal compound nouns affixed by these latter suffixes in Persian denotes action. The suffix “i” can be used in creating action nouns in contemporary Persian (Sadeqi, 1372, p.7). The shared feature of these words is that all of them are deverbal nouns with a bound compound verbal stem as their base. This base forms a ‘morphological construct’ itself and takes the main role in larger constructions in deriving Persian synthetic compounds. According to Lieber’s assumption (1983), compounding is applied prior to derivation, that is, at first a noun/adjective incorporates/combines a verbal root, forming a bound compound verbal stem (following Lieber’s Feature Percolation Principles (1983) and Aronoff’s morphological stem (1994), which is the base for next derivation by means of suffixes ‘ande’, ‘i’, ‘ān’ and zero morph ‘Ø’. From the constructionist stand point, the following pattern forms a verbal construction which is the base of many derivations in Persian. We assume such morphological entity (a compound verbal construction) as a subschema in the hierarchical lexicon, and the output of such schema is a possible but non-existing word.

A compound verbal stem (base) in terms of CM hierarchical lexicon, forms an intermediate stage in the formation of even more complex words. This nonexistent possible word is a bound compound verbal stem in next derivations in Persian, without the assumption of which the highly productive word

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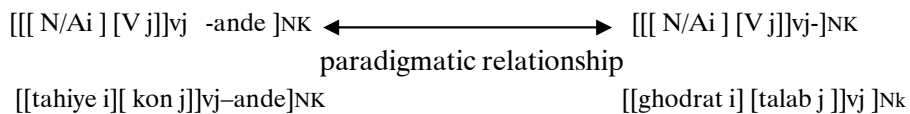
formation processes with the above suffixes are not possible. The notations A, N, V refer to syntactic categories and i, j and k indicate identity or difference in category or reference:

Construction of the Bound Compound Verbal Stem (before derivation)



In the next phase, this schema plays the role of the base in deriving a new more complex word with suffix ‘-ande’ and in some other words with no suffix:

Templates conflation



as it is observed, based on CM, compounding and derivation templates are conflated with each other and by the unification of these two-word formation templates into one complex schema, many compound words are coined without the requirement of the intermediate bound compound verbal stem being as a real word in the lexicon. Booij (2009, p. 15) points out that structurally there is a hierarchy in that the compound is the base of a derived word and the systematic co-occurrence of the two-word formation processes is expressed by template unification. It should be noted that all existing agentive compounds are dominated by the above schemas in the lexicon, and they inherit their predictable properties from these schemas and their bases. The notions of “dominance of schemas” and “feature inheritance” by words are highly critical in every constructionist approach to word formation patterns because these notions basically determine different properties of compound words.

The next important fact in constructionist approach to word formation schemas is that these schemas are constructed by language users on the basis of paradigmatic relations between words, that is, the above examples are formed by replacing the suffix “-ande” in a series of agentives such as ‘tekan dahande’, ‘yad girande’, ‘gerd avarande’, ... or with no suffix in words like ‘ghodrat talab’, ‘ta’sir gozar’, ‘zaban shenas’, and other instances. Indeed, the concept of agentivity, invoked by this constructional schema itself, is expressed in two ways: one way is explicit by agentives with ‘-ande’ in compounds which have been derived from (the incorporation of verb with its argument) and the other way is by agentives without any suffix which have been derived from bound compound verbal stems. The following constructional schemas illustrate these ways:

With obvious suffix:

[[N/Ai] [Vj]]vj -ande] Nk ---- [AGENT of ACTIONj on SEMi] k
[[tahiye i][kon j]]vj -ande] Nk-----AGENTIVE denoting ACTION

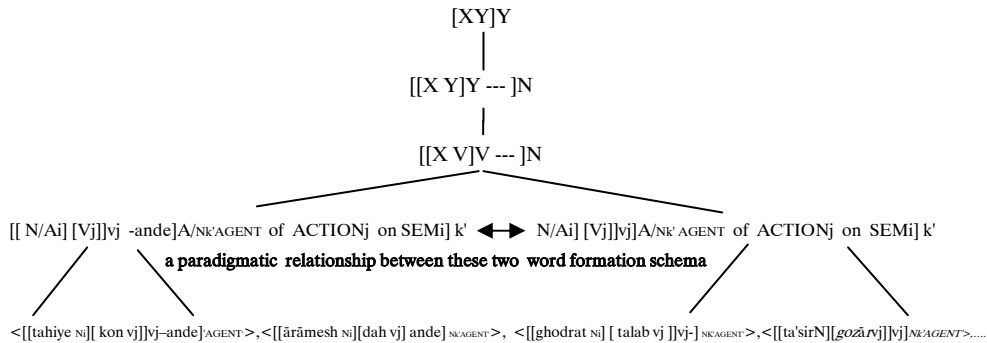
[[N/Ai] [Vj]]vj -ande] Nk ---- [[who [CAUSE TO BE]j SEM i] k
[[tang]Ai [shavj]]Vj - ande] Nk ----- AGENTIVE denoting STATE

Without any obvious suffix:

[[Ni] [Vj]vj-]Nk ---- [AGENT of ACTIONj on SEMi] k
[[ghodrat i]N [talabj]]Vj-] Nk ----- AGENTIVE denoting ACTION

There is a conflation of schemas in which compounding coincides with derivation in one general schema. The above synthetic compounds instantiate this schema. More general and simplified schema ([x y]y) of the above words in the lexicon and lower subschema as are as follows:

Constructional schema and subschema of Persian agentive compound



Following Booij (2012), a prototypical example of holistic properties of word formation is related to the interpretation of NV compounds in Persian which denotes agents without any explicit constituent bearing such meaning. It is this meaning that is evoked by the morphological configuration as a whole and the construction itself, not its elements, is responsible for the overall meaning. This constructional approach is opposite to traditional zero morph assumed by Lieber (1981/1983) for the final lexical category of compound. Summing up, This schema itself specifies a meaning component for which no explicit constituent is available. Holistic properties of such a construction in Persian strongly support CM method for word formation processes.

The concept of headedness [in complex words] in CM is not as central as non-constructionist morphologies (Arcodia, 2012) since the meaning contribution and syntactic features basically belong to construction itself rather than constituents. The issue of ‘headedness’ has been studied largely in generative grammars, and at least since the early eighties, some linguists have proposed that heads play a role in other areas of morphology too; by the mechanism of ‘percolation,’ a derivational suffix as English -ness projects the word class characterization of noun onto the complex words it helps to form, e.g., happiness (Zwicky, 1985; see Lieber, 1981, 1989); such affixes, thus, are

said to be the head of the derived word (Arcodia 2012, p. 366). In the Persian synthetic compounds, the head is the last derivational suffix; e.g., “ande” and zero morphin terms of generative morphology. Of course, The head in many compound words like Persian primary compounds is not determined by a specific right-hand or left-hand rule because some compounds are right-headed for instance “cheshm-pezeshk” (ophthalmologist), “dām-pezeshk” (vet), ...and some others like “cherāgh motāle’e” (a light for studying), “cherāgh rāhnamā”² (traffic light),...are left-headed. Furthermore, the issues of the semantic head, syntactic head, morphological head which are related to the position of the head in compounds are more complicated than can be handled by a general parametric rule in Persian. In Construction morphology, Arcodia (2012, p. 382) describes the notion of “head” as follows:

“In short, in CM the notion of *_head_* in derivation is superseded by that of construction; the inconsistencies which result from the application of the syntactic notion of *_head_* to derivation are not characteristic of an approach in which affixes are just exponents, the semantic contribution is a property of the construction and the identity or non-identity of the part of speech label of the base lexeme and of the derived word is also construction-specific. Nevertheless, the stipulation of a hierarchical lexicon allows us to capture generalizations, as well as sub-generalizations, rather than positing redundant specifications for each individual word-formation schema.”

The fact that the right-hand constituent is co-indexed with the whole compound for meaning, word class, and other features is thus part of the constructional schema, and no further rule (as the right-hand Head Rule) is

²The words like “cherāghmotāle’e” (a light for studying), “cherāghrahnama” (traffic light) may be originally *ezāfe* (genitive) construction, but now, they are considered as a compound noun and a morphological construct, not a syntactic phrase.

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needed. The ordering of schemas reflects a hierarchy: ‘properties of higher nodes are percolated to lower nodes unless the lower node bears a contradictory specification for the relevant property’ and it is termed ‘default inheritance’ (Booij, 2009, p. 206).

From the semantic point of view, the meaning of a gentivity is not present in the meaning of the constituents of a compound noun, but this is the meaning of the construction itself which mainly contributes to the concept of agentivity rather than its parts. This concept is inherited from the schema, and this holistic property of meaning and structure, as the most significant feature of CM, strongly provides empirical evidence for a constructionist approach to word formation issue.

The next series of endocentric compounds contain compound nouns with suffixes “i” (denoting actions, occupations and places) and “ān” (denoting ceremonies):

Action nouns

C)

forsat talabi “opportunism”
moghāvesāzi “making strong”
islamharāsi “Islamophobia”
leābsforushi “clothes shop”
shirinipazi “confectionary”
xoshkshuyi “laundromat”

D)

hanābandān “a ceremony before wedding night”
samanupazān “a ceremony for cooking an Iranian food”
golrizān “a ceremony of charity”
shirinikhorān “a ceremony before marriage”
āyenebandān “a ceremony”
bale borān “a ceremony of engagement”

The construction of these words is as the same as the previous synthetic compounds except for their suffixes; that is, a bound compound verbal stem is the base of the derivational construction and a suffix is the fixed element of the whole construction. In the column C, the suffix is ‘i’, *yayemasdari*, denoting basically action noun, for instance, ‘forsattalabi’, ‘islām harāsi,’ ...but in some

cases referring to occupations/places such as ‘lebās forushi’ ‘xoshkshuyi’ and ‘shirinipazi.’ The main reason why we assume such a bound compound verbal stem as an intermediate construction in these compounds is that these suffixes, based on their subcategorization frames, almost always should attach a compound dverbal stem not a simple one in deriving agentives, action noun and similar cases. Besides, several productive suffixes attach this type of stem paradigmatically in order to coin many new words in Persian without the assumption of which many derivations are not possible.

The constructional schema of these nouns is depicted in the following:

[[Ni Vj]vj-i]NK -----[ACTION /PLACE of SEMj in relation R to SEMi]NK

<[[forsat]NI [talab]VJ]vj-i]NK-----[ACTION of SEMj in relation R to SEMi]NK>, <[xoshk] AI[fou VJ]]vj-i]NK-----[PLACE of SEMj in relation R to SEMi]NK>,<.....>,...

The meaning of the whole compound nouns in this construction is based on ‘action or place’ provoked by the holistic property of this schema.

The last group of words instantiates the following schema presenting a construction for action compound nouns conveying the meaning of ceremonies in Persian:

[[Ni Vj]vjān]NK -----[ACTION of SEMj in relation R to SEMi]NK

<[[hanā]NI band] vj]vj-ān]NK-----[ACTION of SEMj in relation R to SEMi]NK > <[[samanu] NI[paz VJ]]VJ -ān]NK-----[ACTION of SEMj in relation R to SEMi]NK>,<.....>.....

What is really interesting here in this schema is related to the meaning of these action nouns which is not predictable from its parts, that is; neither the meaning of the noun nor the meaning of the verb and the suffix in this template conveys the concept of ceremony, this is the meaning contribution of this schema as a whole that plays the main role for determining the meaning of

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ceremony unlike the Qualia structure (Johnston & Busa, 1996) in terms of which, compound nouns are analyzed and characterized as being fully predictable from their elements. This type of constructional schema strongly supports the holistic property of schemas (in CM) in Persian word formation patterns; in effect, the property of a whole construct rules over all its instances rather than the property of its constituents.

Partially Lexically Filled Constructions

There are some endocentric compounds in Persian, one slot of which is lexically specified, that is, these compounds are dominated by constructional schemas in which at least one slot is lexically fixed, and at least one slot is open. In CM literature, they are called “constructional idioms” (Goldberg, 2003, Booij, 2012, p. 5) and in the sense of Jackendoff (2002) they are productive idiomatic patterns with both variable and lexically fixed positions. Some Persian compounds instantiate this type of schema:

E)

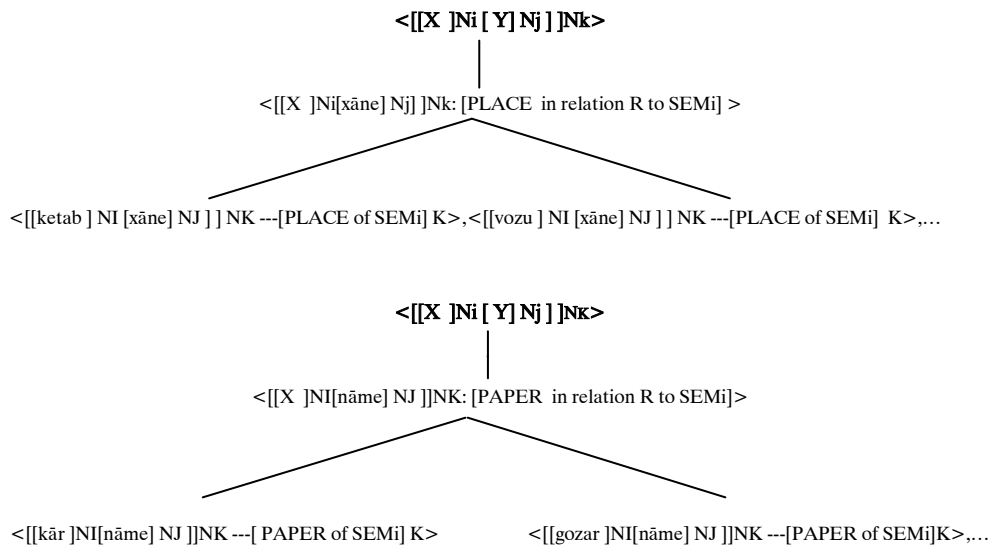
ketab xāne “library”
vozu xāne “a place for ablution”
ghahvexān “cafe”
zur xāne “a place for exercising traditional gym”
daru xāne “pharmacy”
sofrexāne “traditional banquet hall”
motor xāne “powerhouse”
marizxāne “hospital”

F)

kārnāme “grade sheet”
qolnāme “contract”
ruznāme “newspaper”
gozarnāme “passport”
ghat'nāme “resolution”
taraznāme “balance sheet”
pāsox nāme “answer sheet”
da'vatnāme “invitation letter”

These words are instantiations of word formation schemas in Persian in which one slot is filled lexically, and it may have bound meaning due to its occurrence in this compound schema, but when this lexical item is used independently, it denotes a certain meaning. The general schema and

subschema as dominating the words (in the Persian hierarchical lexicon) in columns E and F are respectively as follows:



In these constructional idioms, the right elements, “xāne” (house) and “nāme” (letter) are morphemes looking like “semi affixes/affixoids” (words with bound meanings). Affixoids are represented in schemas as items endowed with a word class because they can still be related to free lexemes in the same synchronic stage of the language, whereas affixes cannot, and thus are not seen as bearing a part of speechtag (Booij, 2010 b, p. 97). In fact, these are synchronically lexemes and denoting the above meaning in Persian, but they have a specified, richer and more restricted meanings (place and paper respectively) when used as part of a compound productively. Of course, the meaning of such affixoids is richer than their general lexical meaning due to their occurrence in these specific constructions; thus, these constructions, themselves, specify these construction-specific meanings for such elements. So, there is a type of systematic relationship between the form of these

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constructions and their meanings which are not derivable from their individual constituents and because of this, the output of this schema is a new compound noun with the index of ‘k’ (NK) not a noun with the index of ‘j’. Following Booij (2012), we can avoid introducing a new morphological category (that is, affixoid) for word constituents in addition to words and affixes by means of the concept of “constructional idiom”, based on a consistent systematic relationship between a fixed lexical element like “xāne”, “nāme” and a specified-construction meaning in Persian. Certainly this is a linguistic fact in Persian that there are a large number of borderline cases –neither a word nor an affix – that have crucial roles in word formation patterns such as most of the present verb stems like “paz”(cook), “sāz”(build), “xor”(eat) and some simple nouns such as “xāne”, “sarā”(place), “nāme”, which have been moving toward bound meanings (diachronically), and these are actively taking part in various synchronic derivations and compoundings.

In order to characterize the head of these words, they are right-headed (based on Generativism); in other words, the fixed elements “xāne” and “nāme” are basically considered as heads from which the category “noun” is transmitted to the whole compound. From the constructionist standpoint, the syntactic label of the head and the whole compound is the same (both of them are nouns) resulting from this fact that the information about syntactic identity of the right-hand constituent with the whole construction forms some part of the schema not that an additional rule is necessary (Arcodia, 2012).

In order to precisely clarify a semantic relationship between a part and whole structure of compound nouns, that is, how the meaning of non-head noun contributes to the semantics of the whole compound structure, we conducted an analysis on the semantics of the form ‘N+xāne’ as a case study.

We found two productive patterns recognizable as two constructions. The first one is the case in which a non-head noun refers to a CONTENT of “xāne”, as in ‘daruxāne’ (pharmacy), ‘golxāne’ (greenhouse) and ‘motorxāne’ (powerhouse). This has the highest frequency and thus is the most productive pattern that the form ‘N+xāne’ has. A second pattern is a case in which a non-head noun indicates an ACTION which is done in a location, as in ‘vozuxāne’ (a place for ablution), ‘kār xāne’ (a place for working, factory) or ‘zurxāne’ (a place for exercising, traditional gym).

It is significant, however, that constructions in the sense of Langacker (2005) are not discrete categories but form a continuum, which is also true of this case. Take ‘ketabxāne’ (library) as an example. The first element ‘ketab’ (book) has an intermediate status between a CONTENT and ACTION: this is ambiguous as to whether it is interpreted as a place for storing books or for reading books. More examples include ‘marizxāne’ (hospital) and ‘sarbaxāne’ (casern): ‘marizxāne’ is ambiguous as to whether it is interpreted as a place for sick people to rest or a place for doing surgery and research about diseases and ‘sarbāzxāne’ can also be interpreted as a place for soldiers or as a place for training military skills. These compounds may be ambiguous in the sense of Langacker (2005), but they are construed intuitively as words with one general meaning by Persian native speakers.

Moreover, a constructional view of compounding enables us to account for the existence of deviated patterns rather straightforwardly. We found such a case as in ‘sofrexāne’ (traditional banquet hall) or ‘qahvexāne’ (café) in our analysis. ‘Sofrexāne’ can be analyzed as a deviated instance of a CONTENT. Originally “sofrexāne” indicates the place where there is “sofre” (tablecloth) in it, although ‘sofrexāne’ can refer to a traditional place in which you can eat. Another example is “qahvexāne” which indicates the place where there is

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“qahve” (coffee) in it, but ‘qahvexāne’ is a place for drinking not only coffee but also tea, other kinds of drinks and even ice cream in its synchronic meaning. Words with the construction “N+nāme” are semantically referring to “documented legal papers” in relation to the semantics of the left constituents of the compound.

There is a hyponymy as “a kind of” relationship or “meaning inclusion” (Yule, 2010, p. 119) between the right element(head) and the left element; for example, “qolnāme” is a kind of legal official paper in a contract/transaction, “ruz nāme” is a kind of official printed paper containing news, advertisements, and so on. Hence, all the instances of this productive schema of word formation in Persian denote a kind of legal/official paper resulting from the semantic property of this construction as a whole not the meaning of the lexeme “nāme” (letter) by itself. In sum, the meaning of such so-called affixoids is developed from these types of word formation schemas in Persian.

The next category to be discussed is that of exocentric compounds.

Exocentric Compounds

Exocentric compounds are a subset of compounds whose lexical category or meaning are not determinable from the head (Aronoff & Fudeman, 2005, p. 108). As for exocentric compounds, the fact that the meaning and features of the whole word are not predictable just by resorting to information encoded in the constituent morphemes is not problematic in CM since non-compositional aspects may all be specified in the construction. For instance, Italian has a productive class of verb-noun compounds denoting tools or agents performing a certain action on a patient (semantic role), such as “lavapiatti” dishwasher (either person or appliance) neither constituent seems to be the head (Arcodia, 2012, p. 386).

A constructional approach to the analysis of Exocentric compounds may account for the existence of these deviated patterns rather straightforwardly. Since the construction category and meaning property of this type of compound cannot be predicted from its parts, we should appeal to morphological approaches which apply holistic methods in their analysis. Here there are some instances:

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siyāh sorfe “pertussis”	jib bor “thief”
<i>nāxon xoshk</i> “scrooge”	delxor “annoyed”
deltang “depressed”	dandāngir “valuable”
torshru “bad-tempered”	cheshmsefid “stubborn”
kallepuk “foolish”	sarzendelively, “energetic”
kolahbardār “swindler”	ābnabāt “candy”
ābzirkah “sly, cunning”	rowshandel “blind”

As it is observed neither of the constituents in these compounds is the syntactic or semantic head and their category is not predictable from their components. Indeed, there are no syntactic and semantic relationships such as headedness, argument-predicate, hyponymy and else between the components of these compounds. So what can determine their meaning and syntactic/morphological specifications?

These exocentric compounds are not compositional, so they are represented as specific constructions with a fixed meaning. The following general schema represents this fixed relationship between a formal structure and a consistently fixed meaning. All existing exocentric constructs including the above data are dominated by this schema:

3. Conclusion

The basic notions of construction morphology can be used to explain some productive word formation phenomenon like different types of compounding in Persian. The idea of a hierarchical lexicon, general word formation schemas and their instantiations, intermediate levels between the concrete individual words and the abstract word formation schema serve to make generalizations about subsets of complex words in Persian. In addition, this approach provides the adequate means for an insightful account of the paradigmatic dimension of word formation.

In this paper, we tried to present some pieces of morphological and semantic evidence for applicability of the constructionist approach to morphology in the area of Persian morphology, especially in compounding. What is especially noticeable in CM is related to its unitary approach to handling different types of compounds. Furthermore, issues like the existence of a systematic relationship between form and meaning of every compound, syntactic property, semantic content, headedness and all characteristics of different kinds of compounds are basically captured in the notion of ‘construction’ as a unitary concept. This model allows us to account both for broader generalizations and also for sub-regularities in sets of words sharing an analogous structure and/or a common constituent. By means of abstract morphological schemas and subschemas generalizing over their lexical instantiations which, in general, inherit their properties from them in the lexicon, the idea of a hierarchical lexicon is reinforced and confirmed, and according to Booij (2012), the lexicon becomes a ‘construction.’

The existence of constructional schemas viewed holistically in a grammatical model increases the degree of generality and economy in word formation phenomena and also provides more insightful account of the

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important notions such as compounding as a constructional schema, conflation of schemas, paradigmatic relationships of schemas and systematic correspondence between form and meaning of a compound than non-constructionist models, since in reality morphological, syntactic and semantic information of a compound is much bigger than its individual components .

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