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Meronymy in Persian: Cognitive Linguistics Perspective

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Abstract: In this paper the author is concerned with the role of cognitive and mental abilities of humans in the formation of meronymy sense relation at the level of words of Persian language, additionally the importance of the role of developed image schemas in accordance with meronymy and also the function of some cognitive and analytical factors in the formation of these image schemas such as construal, consists of perspective (focus point and reference point), profile and scanning are so important to the author. The starting point is the study of the way of the formation of developed image schemas related to meronymy sense relation. The author's fundamental claim is that the mentioned cognitive and analytical factors have a significant role in the formation of three developed image schemas related to meronymy and the mentioned schemas are given different names. Next the program of layered schemas (LSP) is provided by analyzing some Persian simple structures including meronymy. Moreover, we move towards a cognitive inter-lexical semantics in this paper by applying the proposed program of the author (LSP) on Persian linguistic data. For this purpose one example of Persian including meronymy is analyzed on the basis of (LSP). As the last step, the different stages of the formation of meronymy sense relation between the words of Persian are shown through some cognitive figures to add a kind of consistency and support to the author's proposed program in this paper.

Key words: Meronymy · Developed image schemas · Cognitive inter-lexical semantics · Layered schemas program

INTRODUCTION

Cognitivism considers language as a mental and cognitive system which is not separable from the other human's cognitive abilities. On the other hand we are not able to consider one element from the other inside the language system itself, it means syntax, morphology and phonology are not independent components, but they make a continuum accompanied with the other elements of language. In general we can say that the purpose of cognitivism is to access a deeper understanding of human's cognitive and linguistic capacities in order to use it's consequences for semantic, historical and cultural-sociological investigations of language and also for assigning a relationship between grammar and lexicon [1].

Cognitive linguistics studies the cognitive role of language which is the intruding role of informational structures in relation with the outside world. Cognitive linguists also believe that our interaction with the world is accomplished through the informational structures inside the mind and in this case consider the natural language as a treasure full of our knowledge about the world and a systematic collection of meaningful categories which helps us confronted with new experiences and save information about previous ones [2].

In this article the author aims to investigate meronymy sense relation at the level of words of Persian language on the basis of cognitive approach and explain the role and effect of speaker's mental and cognitive abilities to make such sense relation between the words, meanwhile the role of the part of the speaker's abilities called image schemas, which are the body of abstract and complex informational knowledge is mostly emphasized. The emphasis of the author is on the formation of developed image schemas and their role in the formation of meronymy sense relation between words. Yet, all of the analytical-cognitive tools active in the formation of developed image schemas in the minds of Persian speakers are recognized. Finally the process of the

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formation of meronymy is analyzed on the basis of layered schemas program (LSP) and its different stages shown through some cognitive figures, which definitely can be useful in consistency and supporting the role of cognitive and mental abilities of speakers through these processes. Generally the author investigates three hypotheses in this article:

- The speakers of language cause the formation of meronymy sense relation at the level of words of Persian, according to their cognitive and mental abilities and the experience they gain from the outside world.
- Speakers of Persian, prove the fundamental role of cognitive factors such as construal including perspective (focus point and reference point), profile and scanning in the formation of developed image schemas, by giving different construals from the scenes and phenomena of outside world.
- Meronymy sense relation at the level of words of Persian language can be analyzed by using layered schemas program (LSP).

Fundamental Concepts

Image Schemas: Image schemas are in between and conceptual structures used for thinking about more abstract topics and are formed on the basis of outside world experiences [3]. From the technical term, image schemas, it is clear that they are mental, it means they are the representation of motional and comprehentional experiences and they are non-propositional as well. Meanwhile these schemas are imaginary; it means they are not restricted to special activity or comprehension. Johnson [4], emphasizes on abstractness of schemas in comparison to the completeness of motional and visual images. According to [5], image schemas exist at the level of generality and abstractness and they are above the concrete images. Speakers of language are able to create an infinite number of comprehensions, images and events deductively because of the abstractness of image schemas.

Construal: Safavi [3], believes that it's the description of scenes by means of concepts and a collection of cognitive processes. Construal itself consists of some other cognitive factors:

Perspective: According to [3], all of the speakers of language look at a special scene from a specific perspective and use language in order to point to this perspective. This is one of the factors of construal that consists of two other cognitive factors, named focus point and reference point.

Below is the summary description of these factors:

Focus Point: Lee [6], believes that focus point interferes with different kinds of construal and depends on one of the componential parts of the specific construal which has been distinguished and put in priority in comparison to the other parts. For instance, in sentence a) With this key, you can not open the door, the role of hearer has been distinguished, but in sentence b) This key can not open the door, the role of the key has been put in priority.

Reference Point: It's the point according to which the position of other elements is compared in a specific scene [12].

Profile: This is one of the other cognitive factors of construal, which provides a fundamental description of a special event or scene [3].

Scanning: It refers to the kind of the structure of profile and is divided into two groups: summary scanning and sequential scanning. In the former one, the description of an event is conducted by means of a noun phrase, while in the latter, the speaker describes the event and provides the sequence of happening of that event [3].

Sense Relations at the Level of Words: It refers to the study of the conceptual and semantic relations at the level of words. These kinds of relations can be seen among the concepts which seem independent at the first glance in semantic component of language, but have a very close relationship with each other [3].

Concept Meronymy at Word Level: In this kind of relation there is the possibility that one special concept makes part of another concept. For example, if we say that concept "nail" makes part of the concept "finger", the former concept is considered as a part and the latter as a whole. This kind of sense relation between these two concepts is called meronymy [7].

Revision of Concept Meronymy on the Basis of Cognitivism: Conceptual relations between the words of language, is a kind of relation between the different contextual interpretations of words, not a relation between the words themselves. Therefore, the contextual

interpretation of words, has a very important role in creating a conceptual relationship among the words of language [8].

For instance, if we consider the words [pIrâhæn] "shirt" and [dokme] "button" in Persian, in one special context, it is possible that concept [pIrâhæn] is part of the concept [dokme] (if that shirt has buttons), but in another different context (if that shirt doesn't have any buttons), the concept [dokme] isn't considered as a part of the concept [pIrâhæn]. Moreover concept "button" can be part of the other concepts like "bag, trousers, skirt, etc" in the other various contexts, (if the mentioned concepts have button in special intended context).

In meronymy sense relation, there exists two construals: One, the construal related to the phenomenon considered as a whole and consists of different parts and the other the construal related to the meronymy sense relation between two intended concepts. In the previous example, [pIrâhæn] "shirt" and [dokme] "button", one construal is related to the concept "shirt" considered as a whole and contains different parts, such as, "collar, sleeve, button, etc," and the other construal is related to the relationship between concepts "shirt" and "button", it means "button" is a part of "shirt". So, there exists the sense relation meronymy between these two concepts and in case of the absence of that part in the intended whole, that whole will become incomplete [8].

In the following parts, the author aims to bring some examples of meronymy from Persian and analyze them on the basis of cognitivism by considering the context. Meanwhile, identifying all of the analytical-cognitive tools which play important roles in making developed image schemas and as a result making meronymy sense relation is the other goal of the author. Finally, the evaluation of meronymy sense relation on the basis of the author's layered schemas program (LSP) will be taken into consideration:

1. a. [u æ ošt .æš râ borId]
he finger his Ø cut
He cut his finger.

1. b. [u nâXonhâ jæš râ gereft]
he nails his Ø cut
He cut his nails.

2. a. [mæn kâmpIjotere ğædIdI XærIdæm]
I computer new bought
I bought a new computer.

2. b. [mânItore kâmpIjotere mæn Xærâb æst]
monitor computer I out of order is
The monitor of my computer is out of order.

3. a. [mæn m uhâ jæm râ ræŋ kærdæm]
I hair my Ø colored
I colored my hair.

3. b. [pedær æm særdærde šædIdI dâšt]
father my headache terrific had
My father had a terrific headache.

4. a. [dokmeje šælvâre bæče oftâd]
button trousers child dropped
The button of child trousers dropped.

4. b. [ân bæče pIrâhæne zIbâjI be tæn dâræd]
that child shirt beautiful has worn
That child has worn a beautiful shirt.

The speakers of language cause the formation of some conceptual structures on the basis of mental and cognitive abilities and the experience which is gained from the outside world as well. These structures are very abstract and complex, which are named schemas. In case of meronymy sense relation, the speakers of Persian, observe a scene which is considered as a whole in the world outside and analyze this scene by the use of their mental and cognitive abilities. For instance, computer system is a whole which contains some various parts. In the construal related to computer, factors such as focus point and reference point are analyzed. The part which makes the focus point of the speakers of language in this construal, is the whole, because they put [kâmpIjoter] "computer" itself in their focus point as a whole consisting of various parts. Speakers of language consider [kâmpIjoter] "computer", as a whole with various parts, the absence of which makes the whole incomplete. Another factor which is taken into consideration here is reference point, which is a passive analytical-cognitive factor in this construal, because no point is considered as a reference point in this interpretation. Therefore, the position of the other parts in this scene isn't compared with any point as a reference point. Next, speakers of Persian provide a profile of this scene as follow:

[kâmpIjoter] "computer" is a whole consisting of various parts, the absence of which makes this whole incomplete.

Accordingly, this profile is scanned in the minds of language speakers as a special kind of schema which is named deductive schema by the author. The scanning process here is sequential scanning, because the speakers have described a scene or an event completely by the use of linguistic elements.

The other construal needed for making meronymy is connected to the relation between a whole and a part in this sense relation. For instance, the meronymy relation between concepts [kâmpIjoter] "computer" and [mânItor] "monitor" needs a special construal which shows the relationship between these two concepts. On the contrary to the former construal explained, in this construal, the focus point of language speakers is on the part which is [mânItor] "monitor" here, not the whole [kâmpIjoter] "computer". In addition, reference point is considered as a passive analytical-cognitive factor in this construal, because no point is considered as a reference according to which the position of the other elements be compared to that point. In other words, in this construal, the elements aren't compared to each other according to spatial and place positions. Next, a [kâmpIjoter] "computer" profile is provided by language speakers for this scene:

[mânItor] "monitor" is one of the various parts of the whole [kâmpIjoter] "computer", the absence of which makes [kâmpIjoter] "computer" an incomplete whole.

This profile is scanned and stored in the minds of language speakers as an abstract schema which is named inductive schema by the author. This scanning is again a kind of sequential scanning, because it contains a complete description of a special phenomenon in the world.

Finally, the author emphasizes that a more complex schema is made of the fusion of these two schemas in the minds of Persian language speakers named deductive-inductive schema, which plays the most significant role in creating meronymy sense relation at the level of words.

Layered Schemas Program (LSP): The author has represented the construction of layered schemas model and named this model as layered schemas program (LSP). Accordingly, this program consists of i) the level of lexical concepts ii) primary layer of image schemas consists of experiential models iii) secondary layer of image schemas consists of various sub-models and vi) developed layer of image schemas containing more abstract and complex schemas. Thus the meaning of an intended word in an utterance arises by virtue of language users forming interpretations based on the lexical concepts employed and the activation of different parts of experiential models and sub-models (primary and secondary layers of image schemas). Moreover, the interpretations are always guided by background knowledge and extralinguistic context. Here the author is concerned with introducing and describing the construct of experiential models (primary layer). His claim is that experiential models, are related to the notion of frame [9], semantic frame [10-12] and domain [13]. The main claim is that lexical concepts provide sites of access to experiential models and are relativised with respect to them. The reason for preferring this term over the related notions of domain/base or semantic frame, is that an experiential model is a coherent, non-linguistic knowledge structure, similar to what Langacker and Fillmore seem to have in mind. That is, it is a richly specified conceptual entity, akin to what Barsalou [9], refers to by his use of the term frame. But an experiential model is accessed at various points by distinct lexical concepts, which are thus relativised to it and in part, collectively constitute it. In other words, an experiential model represents an interface between richly-specified conceptual knowledge and nodes of access at particular points in the experiential models provided by specific lexical concepts.

Additionally, lexical concepts are conceptual units specialized for symbolic representation in language, but experiential models (primary layer) according to the author can be used as a basis for perceptual simulations and consists of some sub-models (secondary layer) with more specific informational knowledge [9, 14, 15]. These sub-models together make the experiential models. Moreover, it is too important to add the point that in layered schemas program (LSP), according to the author, all of the schemas are arranged from the most primitive ones to the most developed schemas in a hierarchical position.

Lexical Concept Selection and Interpretation: This is the process in which linguistic or extra-linguistic context selects for a particular lexical concept. Selecting the correct lexical concept is required for the interpretation process. One of the complexities associated with meaning-construction; however, is that many processes occur at the same time and thus, it is clear that the processes involved are sequential [16], far from interpretation serves to activate part of the semantic potential that each lexical concept provides access to. This process of

interpretation, provides the crucial break between lexical representation and meaning-construction. It is a consequence of interpretation that a conception arises.

Evaluation of Meronymy on the Basis of (LSP) Program: It's clear that evaluation of meronymy sense relation on the basis of layered schemas program would help us to prove the role of cognitive and mental abilities of humans in the formation of meronymy at the level of words of Persian and also demonstrates various stages of the formation of this sense relation.

Here we consider one example in this case to analyze it according to the author's recommended program:

1. a.	[u	æ ošt	æš	râ	borId]
	he	finger	his	Ø	cut
	He cut his finger.				

1. b.	[u	nâXonhâ	jæš	râ	gereft]
	he	nails	his	Ø	cut
	He cut his nails.				

Firstly, the author shows the relationship between lexical concept "finger" [æ ošt], it's experiential and models (primary layer of image schemas), sub-models (secondary layer of image schemas) and developed layer of image schemas:

Level of lexical concept primary layer of schemas secondary layer of schemas Developed layer of schemas

Here the author shows the relationship between lexical concept "nail" [nâXon], its experiential and models (primary layer of image schemas), sub-models (secondary layer of image schemas) and developed layer of image schemas:

Level of lexical concept primary layer of schemas secondary layer of schemas Developed layer of schemas

As you see in Figure 1, lexical concept "finger" [æ ošt] has occurred in an utterance. Before the use of this concept in context, that special lexical form provides access to its semantic potential within experiential models and sub-models. When it is used in linguistic context (utterance) and also by considering extralinguistic context, some parts of the semantic potential which were accessed before, become activated. Eventually, it causes

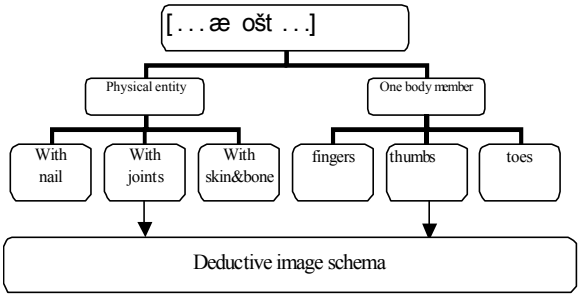

Fig. 1: Formation of concept finger

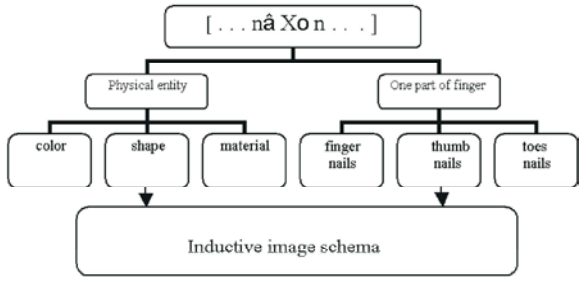

Fig. 2: Formation of concept nail

the simulation of some parts of experiential models (primary schemas) which contain general information about concept "finger" [æ ošt]. Therefore, primary schemas are activated to create a very simple and elementary concept of "finger" [æ ošt]. Then, in the second layer which is the level of experiential sub-models, the concept "finger" [æ ošt] provides access to the more detailed and specific body of knowledge in the form of some secondary schemas, so sub- models are activated in the second level as well. As a result of the activation of primary and secondary schemas, the intended concept arises.

In Figure 2, the author has shown the process of the formation of concept "nail" in this cognitive model. The lexical form "nail" [nâXon] has occurred in an utterance which is considered as linguistic context and by considering the extralinguistic context, some parts of the semantic potential of the special lexical concept are activated. Put it another way, some parts of the experiential models (primary schemas) are simulated and some parts of the experiential sub-models (secondary schemas) are activated as well to add more details and information knowledge to the concept "nail" [nâXon].

Finally, at the last level, named developed layer of image schemas, a kind of relationship is made between the developed image schema related to the concept "finger" [æ ošt] and the one related to the concept "nail" [nâXon]. This sort of connectedness between the schemas which

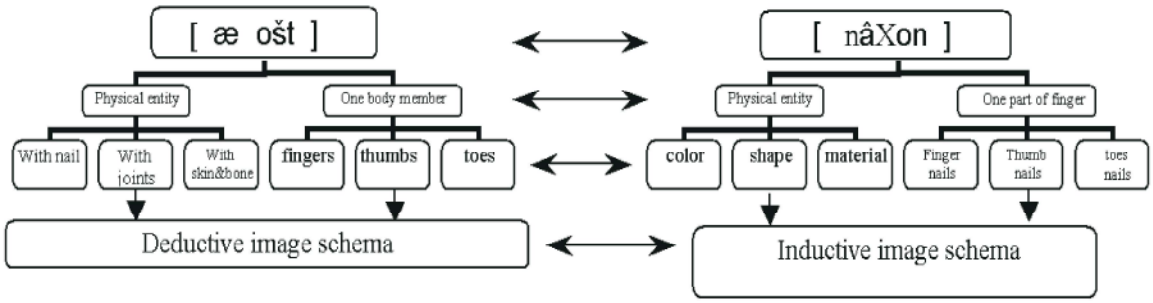

Fig. 3: Model of formation of meronymy sense relation at word level

belongs to the two concepts, leads to the formation of metonymy sense relation at the level of the two intended words of Persian language. In Figure 3, this whole process has been demonstrated completely by the author.

CONCLUSION

As the findings of this study show mental and cognitive abilities of the speakers of Persian and also the experience they receive from the environment play a significant role in the formation of meronymy sense relation at the level of words of Persian. Meanwhile, image schemas are made on the basis of knowledge of outside world. As I proposed in this paper, two developed schemas named deductive image schema and inductive image schema and primary-secondary layers of schemas are involved in the formation of meronymy sense relation. All together are made in the speaker's minds on the basis of some cognitive and mental factors and tools. As proved and shown in the paper, factors like perspective (focus point and reference point), profile and scanning, totally known as construal, have the main role of making developed image schemas in the minds of speakers. Finally, I analyzed one Persian example according to layered schemas program (LSP) proposed here. By the use of (LSP) program we are able to move towards a cognitive inter-lexical semantics, because it plays the role of an interface between lexical concepts and cognitive principles and factors. Moreover, the research presented here is programmatic. As the mentioned models by the author are psychological rather than linguistic entities, we require a fully fleshed out psychologically-based account. Additionally, I have presented no experimental evidence for the different cognitive and mental processes involved here. Clearly, psycholinguistic evidence will be required in order to support and modify the proposed and used theories in this paper.

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