A Cognitive Semantic Approach to Persian Spatial Prepositions, a Pedagogical Perspective, Case Study: Persian Preposition /dær/

Arsalan Golfam*

Assistant professor, Tarbiat Modares University, Tehran, I. R. Iran

Fatemeh Yousefi Rad**

Assistant professor, Payame Noor University, Qazvin, I. R. Iran

(Received: 1 July. 2008, Accepted: 15 May. 2009)

Abstract

We will argue that the common practice in the literature of giving a long list of senses for spatial prepositions, implying that they are unrelated to one another is not adequate. The more adequate way is presenting a network of *related* senses based on a prototype. Also, speaking specifically about Persian preposition /dær/, we will argue that the meanings of spatial prepositions arise as a consequence of our daily bodily experiences in the world and our conceptualization thereof. It is also shown that the cognitive semantic approach taken in this paper sheds more light on the semantic structure of spatial prepositions in general and /dær/ in particular, a light which can be very useful in teaching prepositions.

Key Words: Cognitive Semantics, Spatial Prepositions, Prototype Theory, Persian Preposition /Dær/, Language Teaching.

* Tel: 021-82883672, Fax: 021-82883672, E-mail: golfamar@yahoo.com

** Tel: 021-82883672, Fax: 021-82883672, E-mail: golfamar@yahoo.com

1. Introduction:

Persian spatial preposition /dær/ is roughly equivalent to English in and at. It is used so extensively that according to pldb[1] corpus, it is the second most frequent word in Persian, preceded only by /va/ which means *and*. Also, to give more proof of the extended use of spatial prepositions, the third and fourth most frequent words in Persian according to pldb corpus, following /dær/ are /be/ and /az/, roughly equivalent to *to* and *from* respectively. According to Brala(2002, p.1):"Most, if not all (E)FL teachers and students are painfully aware of the fact that when it comes to mastering a foreign language one of the most troublesome areas to learn is the (idiomatic) usage of prepositions. Learning how to use prepositions correctly in a foreign language is a colossal task, one that is usually not an accomplished way of learning process, and one that many learners never manage to master thoroughly. As Lindstromberg (2001: 80) has pointed out, less than 10% of upper-level EFL students can use and understand prepositions correctly."[2]

Now, the traditional semantic analyses of /dær/ and other prepositions found in the Persian grammar books as well as the Persian dictionaries' entries usually present a long list of senses, as if there is no relation between them. These accounts are a good source for the variety of usages these items have and also present a good historical review but tell us nothing of the high rate of systematicity found in the semantic structure of spatial prepositions in general and /dær/ in particular.

2. Theoretical Preliminaries

2-1) background

There are two main approaches to lexical semantics in general, classical and cognitive. On the whole, these two approaches differ in three main respects:

1- http://pldb.ihcs.ac.ir

1- Brala, Maria, (2002), 'Understanding and translating (spatial) prepositions, An exercise in cognitive semantics for lexicographic purposes', In Working Papers in English and Applied Linguistics**,** Vol. 7, University of Cambridge Press, pp. 1 - 24

a) Autonomy of linguistic semantics

Classical lexical semantics believes in the separation of linguistic semantics from encyclopedic information usually studied in pragmatics. So in this view, word meaning is autonomous. Cognitive semanticists, in contrast, suggest that all conceptual information associated with a lexical item is broadly encyclopedic in nature in that it is part of and needs to be understood against the background of broadly cognitive structures. They advocate that word meaning is not determined by the language system alone and that there is no clear line between purely semantic information and encyclopedic information.

b) Criteria for Defining Word Meaning: Necessary and Sufficient Features or Family Resemblance?

Following Aristotle's definition of a category, classical lexical semantics considers necessary and sufficient features to be the requirement for category membership and hence, for the definition of polysemous items like prepositions. Cognitive semanticists in contrast, believe in Wittgenstein's idea of family resemblance to be the motivation behind category membership:

"Indeed, members of a category in the extension of a lexical item may be linked, not because they all share the same criterial set of attributes, but because they share different sets of attributes with each other; in other words, because they are similar to each other in different respects".[1]

"Similarly for spatial prepositions, it would be very hard to come up with a semantic description in terms of necessary and sufficient features. Indeed, the various usages or readings of a preposition are linked through similarity rather than through identity. The conceptual/ semantic structure of spatial prepositions, then, can most appropriately be described in terms of a family resemblance network".[2]

c) Prototype Theory

Cognitive semantics, unlike classical lexical semantics, believes in prototype

---

1- Hubert Cuyckens, "Family Resemblance Structure in the Dutch Spatial Prepositions *door* and *langs*" in Cognitive Linguistics, vol. 6, 1995, p. 183

1- Hubert Cuyckens, ibid, p. 184

theory of categories. Put simply, prototype theory, originally put forth by Eleanor Rosch, maintains that members of a category do not all enjoy equal status. Some members are more central and some are more peripheral. So, membership is not a matter of one or zero but gradience is involved in the definition of category membership. Likewise, among the senses of a polysemous item like prepositions some senses are more central while others are more peripheral and link to the central sense through cognitive mechanisms like metaphor, metonymy, etc. Now, prototype categories have various characteristics which need not coincide. These characteristics include absence of necessary and sufficient definition, categorization based on salient member of the category, vague boundaries and radiality.

Put all these together, in cognitive semantic approach, the different senses of a polysemous item like prepositions are considered to form a family resemblance network. This is a prototype- based network the relations among its members are not arbitrary but highly motivated.

In this paper, this framework is adopted for the semantic analysis of Persian spatial preposition./dær/. The data is gathered mainly from contemporary Persian. Care has been taken not to base the discussions and conclusions on introspection. The reason is that:

"Cognitive linguists have strongly criticized the overwhelming use of introspection in linguistic methodology (Geeraerts, Grondelaers & Bakema 1994; Sandra and Rice 1995). The fact that theorists turn to introspective knowledge of the phenomena studied may lead to ad hoc conclusions. The two alternatives to introspection currently applied in cognitive linguistics are psycholinguistic experimentation and corpus analysis."[1]

Now, the method adopted here is that of corpus analysis.

2-2) Spatial Prepositions and Their Semantics

"Semantically, a preposition expresses a relation between two arguments x and

---

1- Ignasi Navarro I. ferrando," Towards a Description of the Meanings of *at*" in Perspectives on Prepositions, edited by Hubert Cuyckens & Gunter Radden, Tubingen, 2002, p. 212

y, with y corresponding to that part of the prepositional constituent the preposition combines with and x being made up of one or more elements from the rest of the sentence or the neighboring discourse that contains the head of the constituent the PP is a complement or an adjunct to. Spatial prepositions, now, indicate the spatial relation between two arguments x and y, ie, how x and y relate to each other in space. More specifically, in a large number of cases, they describe the place/ location of x (in other words, they assign x to a particular place) by using the argument y as reference, or still, they serve to locate x with respect to y, or rather the place of y"[1]. Now, in cognitive linguistics, the terms trajector (TR), and landmark (LM) are used to refer to x and y respectively.

Before the advent of cognitive semantics, the meaning of words in general and spatial prepositions in particular, was defined on a necessary and sufficient criteria basis (Cooper, 1968, Jackendoff, 1976, Kats, 1966 & 1972, Leech, 1969, Tarsky, 1956).

According to this tradition, a unique set of necessary and sufficient criteria accounts for the meanings of each word. However, highly polysemous words, and most notably among them prepositions, count as a serious challenge to this explanation. How should one define a set of necessary and sufficient criteria so that it can cover all and only the different senses of a highly polysemous spatial preposition?

Now, within the framework of cognitive semantics, prepositions receive a much better semantic explanation. Cognitive semantics proposes that different senses of a polysemous word are linked through a highly-structured prototype-based semantic network. This paper, in the spirit of Cognitive Semantics, claims that the different meanings of Persian preposition /dær/ form a radial network, the links among it's members are not arbitrary. Quoting Brugman and Lakoff(2003):

"The theoretical claim being made is that a polysemous lexical item is a radial category of senses. What is important for our purpose is that the kind of network

1- Hubert Cuyckens," The Semantics of Spatial Prepositions in Dutch", 1991, pp. 80-81

structure found here is not made up ad hoc to characterize this set of facts. Instead, this is a common category structure that occurs in domains other than the lexicon. There is an important consequence of using the general theory of radial categories to characterize polysemy. In the general theory, the links between members of the network are not arbitrary. The theory of radial categories comes with a characterization of possible link types. In the case of polysemy, the link types are the types of relations linking the senses of the word. In general, some of the links may involve shared information, some may involve relation between a general and a specific case, and some may be metaphoric…. But, overall, there is only a small number of types of relations between senses of words…."[1]

3. Methodology

3-1) First, the sentences and phrases containing /dær/ were gathered. The data were primarily collected from contemporary Persian utterances. Also we tried to abandon reliance on introspection as far as possible.

3-2) After collecting the data, the many usages of the preposition were categorized according to factors such as LM configuration, the relation between LM and TR, both geometrically and functionally. The same was done also for temporal and abstract usages of the preposition in question beside the spatial usages.

3-3) Then the prototype sense of /dær/ was identified. This prototype sense is presumably the spatial sense. However, care should be taken that even among the strictly spatial senses of the preposition, there is a considerable variety of usages and singling out the prototype sense is not very straightforward. So, even among the spatial senses, one can observe centre-periphery structure, some usages being more central than others.

It should be noted that the selection of spatial meaning as the prototype sense is not arbitrary, having its root in localist hypothesis. However, there are some other independent proofs regarding the prototypicality of spatial sense, among these one

---

1- Claudia Brugman & George Lakoff, "Cognitive Topology and Lexical Networks", in Cognitive Linguistics, Basic Reading, ed. Dirk Geeraerts, Mouton de Gruyter 2003, pp.109-110

can mention the frequency analysis of corpus and the psycholinguistic experiments, not the subject of this study.

3-4) Then, the relation among the senses was characterized. We believe that only a limited number of relations are possible among the different senses of a polysemous item and these relations are the same processes playing role in diachronic semantic change, esp metaphor, metonymy and also semantic extension and narrowing.

3-4) Finally, taking into consideration the existing links among the different senses, the semantic network of the preposition was proposed.

Concerning the limitations of this study, it should be noted that although prepositions including *dær* are actively involved in the creation of phrasal verbs, these phrasal verbs are not studied here. Moreover, complex prepositions including *dær* are also excluded from the scope of this study. This by no means implies their theoretical triviality, but on the other hand they deserve a separate study in their own right.

Data Analysis

In presenting the data, we have chosen to translate the phrases and sentences containing /dær/ but to put /dær/ intact. As hinted before, it is usually translated as *in* or *at*.

Now consider some of the data:

Water is dær the pot.

He is dær the office.

I am dær the street.

The president dær the head of a high ranking delegate went to the UN.

The three Finnish militia dær Iran waters

The bomb which was planted dær the route of the car

He is dær my hand/ fist (metaphorically, completely under my control)

Dær times like….

Dær the age of 15

Dær the sphere of politics

The petroleum station burning dær fire

Dær this moment

Dar that point

A short look at these examples of the usage of /dær/ is a sign of its wide application. Dar is used not only with spatial, temporal and abstract LMs, but within each of these domains exhibits a considerable variety. To give an example of spatial domain, the kind of relation the LM of dær has with its TR is highly flexible: *pot* is a 3-dimensional entity/container which contains the TR (water) while *Iran waters* is a rather shapeless liquid. *Street* is a 2-dimensional surface and *point* is well, just a 0-dimensional point. This variety is also exhibited in temporal and somehow less in abstract domains.

Now the question is, how to define one meaning of /dær/ that can cover all this variation. In other words, taking into account that usually the LM features are considered as part of the meaning of prepositions, what kind of meaning can be posited that includes all and only the above configurations?

It seems that we should abandon the endeavour to find a unique definition based on necessary and sufficient criteria for *dær* and we should consider /dær/ as having a semantic network with multiple nodes, the links among which are established through family resemblance, that is to say, the adjacent nodes are the more similar meanings of the preposition, having some common features while the farer nodes not necessarily having common features.

Now, the question is how to account for the links between adjacent nodes in the polysemous network of /dær/?

This paper tries to show that the different senses of /dær/ form a radial network the relations between whose nodes are not arbitrary but are principled and recurrent through the lexicon. So they form a highly structured system with the links between its nodes being motivated. Let's see how.

After investigating the data, a pattern of usages shows itself. Within the domain of spatial usages, dær is used with 3-, 2-, 1- and 0-dimensional LMs. As an example

of each usage, one can mention respectively:

a. Water /dær/ the pot

b. /dær/ the Tv screen

c. The bomb planted /dær/ the route of ….car

d. Yazd is /dær/ the centre of Iran

Now, one may ask why we should consider route in c as an example of 1-dimensional LM since in real world no route is actually one dimensional, routes and streets usually having width as well as length. The answer lies in one of the main tenets of cognitive semantics, ie the process of conceptualization. Hence, in the cognitive semantics approach to language, it is believed that language is not a mere mirror to the world out there, but what is more important is the way we as humans conceptualize it. Now in the process of conceptualization, depending on the situation one may decide to make some elements of reality more prominent and push some other presumably less important features to background. So in the example above it is the one dimensionality and linear feature of route that is at issue and hence brought into prominence. The same explanation goes for d. The city of Yazd has not presumably occupied just one point on the map of Iran, however in this context it is just its location that is at issue and hence it is conceptualized as a 0-dimensional point.

Now, let us consider /dær/ in its temporal usages. It is interesting to note that in its temporal usages, /dær/ has a more or less similar configuration to that of the spatial ones and this is encoded/ lexicalized very nicely and clearly in Persian:

1. /dær/ the container of 3 hours

2. dær the length of last 5 years (referring to the duration of time)

3. dær the width of 5 minutes (referring to time limit)

4. dær that point of time/ moment

So, in the first example, the domain of time is conceptualized as a 3-dimensional entity and this is clearly lexicalized through the word *container*. In the second and third example, time is conceptualized as a line, hence one- dimensional and finally in the fourth example time is conceptualized as a 0-dimensional point.

It is clear that one of the distinctions which was at work in the spatial domain, ie the distinction between 3- and 2-dimensinal LMs disappears in the domain of time, hence the preposition d*æ*r conceptualizing time into a 3/2 dimensional,1-dmensional and 0-dimensional.

But what about the abstract domains? What does *dar* refer to in the more abstract cases of usage? Let's see some examples:

/d*æ*r/ the domain of politics

She has no competitor /d*æ*r/ intelligence

/d*æ*r/ the result of cancer, …

/d*æ*r/ situations which…

It is clear that in the sphere of abstracts, the classification of usages/ tokens dimensionally becomes more difficult, even impossible. What is important here is not geometrical features, but rather the functional features of the relation introduced by /d*æ*r/.A central relation at work here is that of *control.* In this relation, usually LM, controls the location of TR, in the same way that a container controls the location of the contained material. Moreover, in explaining the abstract cases one can employ the conceptual metaphors introduced by Lakoff and Johnson, specifically the conceptual metaphor *states are locations* accounts for the cases in which /d*æ*r/ is applied for states of politics (a) and being intelligent (b).

Now, what has been said so far can be summarized in the following table:

	Spatial domain	**Temporal domain**	**Abstract domain**
3- DIM	inclusion		
2- DIM	boundedness		
1- DIM	Position/ place(linear conceptualization)		
0- DIM/ point- like	Position/ place (punctual conceptualization)		

Notes:

1. It is clear that in the domain of time, the difference between the 3-dim LMs and 2-DIM LMs is lost.

2. The bold arrow at the left side of the table indicates *the level of control* which LM exerts on TR. Note that the more we move away from 3-DIM LMs which act as containers for their TRs, the less the amount of control exerted from LM into its TR.

Another important point to be noted is that within the theoretical framework adopted in this paper, the question of how many senses the preposition /dær/ has is not a theoretically important one for several reasons. For one thing, this question is based on the conduit metaphor of language, according to which words act as containers for meanings and meanings are regarded as things contained in words. Now, this view is not maintained in cognitive semantics. In the view of cognitive semantics, meanings are not regarded as stable entities inside words but are contextually flexible. For another thing the answer to the above question varies according to the level of abstraction one decides to adopt for their semantic analysis, the more abstract and schematic the level of analysis, the less the number of meanings would be.

4-1) The Prototype of /dær/

The prototype sense of /dær/ is presumably its spatial sense and among the several usages of d*ær* in spatial domain, the one in which LM is 3- dimensional and plays the role of container for it's TR is the prototype sense of /dær/. In this prototype sense, the functional element of *control* goes hand in hand with the geometrical element of 3-dimensionality and inclusion. There are some clues in determining the prototype sense of polysemous words in general, one is higher frequency of usage of the prototype as compared with other senses, another the native speakers intuition. This second clue demands some explanation especially in the light of what we have said before concerning the attitude of cognitive semantics towards introspection.

According to Geeraerts (2006), given the presupposition that introspection

yields only a partial insight into the semantic structure of words, we can also expect that it is exactly the prototypical kinds of usage of those words that reach the introspective consciousness of language user. So as far as the determination of prototype is concerned, we can also partly rely on intuition. The intuition also clearly points to this usage as the prototype of *dær*.

Moreover, the spatial senses of *dær* are motivated through *time as space metaphor*. So, spatial senses are extended by the use of this conceptual metaphor to yield temporal senses.

Now, it seems that the abstract senses of *dær* are extended from the geometrical and functional components of its prototypical spatial sense. So we propose the following model for the extension of abstract senses of *dær*:

Components of spatial *dær* →	**Abstract extensions**	**example**
Boundedness (through metaphor)	State/ situation sense	*Dær* war
Inclusion (through narrowing)	Part- whole sense	I am ***dær*** the army
Physical control (through metaphor)	Metaphoric control	He is ***dær*** my fist!
Surrounding (through metonymy)	cause	*Dær* the result of…

An important point to be noted here is that although we suggest that such- and-such a sense is taken from the component x of prototypical dær does not imply that the other components of spatial dær are not present in that sense. Rather, the question is merely the relative salience of that component in such a specific sense.

5. Conclusion

The proposed radial network of the prototype-based family resemblance structure of /dær/ should not –and as we see it, cannot - be considered as a mere rephrasing of the traditional accounts of the meaning of this preposition because it actually does more than provide a mere list of contexts and their meanings. It also

explains the semantic contribution of /dær/ to those contexts. Moreover, it also provides a scheme that explains the conceptual links between different senses, thus rejecting the common –even if implicit- idea that the meanings are quite arbitrary.

Although it is not always straightforward to identify the links among the senses of a preposition, it is also true that in the majority of cases it is possible. Hence what appears to be completely arbitrary in traditional accounts turns out to have a considerable degree of structure and motivation in cognitive semantic framework. In this way, less burden is put on the memory of language learner and the semantic structure of preposition seems much more systematic, hence learnable.

References

Brala, Maria. (2002) "Understanding and Translating (Spatial) Prepositions, An Exercise in Cognitive Semantics for Lexicographic Purposes": *Working Papers in English and Applied Linguistics*, Vol. 7, University of Cambridge Press, pp. 1 - 24.

Brugman, Claudia and George Lakoff.(2003), "Cognitive Topology and Lexical Networks", *Cognitive Linguistics, Basic Reading*, (ed) Dirk Geeraerts, Mouton de Gruyters.

Cuyckens, Hubert.(1991), *The Semantics of Spatial Prepositions in Dutch*. PhD thesis, Universitaire Instelling Antwerpen.

---. & Britta Zawada.(2001), *Polysemy in Cognitive Linguistics*. Amsterdam: John Benjamins.

Geeraerts, Dirk.(1988), "Where Does Prototypicality Come From?" in B. Rudzka-Ostyn (ed.), *Topics in Cognitive Linguistics*, Amsterdam: John Benjamins Publishing Company, 207-229.

---. (2006*), Words and Other Wonders, Papers on Lexical and Semantic Topics*, Mouton de Gruyter,Berlin / New York.

---. & S. Grondelaers, and P. Bakema.(1994), *The Structure of Lexical Variation. Meaning, Naming, and Context* ,Berlin: Mouton de Gruyter.

Ignasi Navarro I Ferrando.(2002), "Towards a Description of the Meaning of AT", in *Perspectives on Prepositions*, Edited by Hubert Cuyckens and Gunter Radden, Tubingen.

Lakoff, George.(1987), *Women, Fire and Dangerous Things: What Categories Reveal About the Mind*. Chicago: University of Chicago Press.

---. and Mark Johnson.(1980), *Metaphors We Live By*, Chicago: Chicago University Press.