

A Cognitive Linguistics Study of the Conceptual Derivation of Word Meaning

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Abstract

To maintain understanding, usage, and interrelations of English vocabularies by Iraqi second language learners (L2) is a challenging mission. In the current study, the cognitive linguistic theory of domains by Langacker (1987) is adopted to provide new horizons in learning vocabulary and qualify Iraqi students with a deep knowledge analysis of the meanings of lexical concepts. This paper aims to test the validity of expanding the English language vocabulary for second language learners from Iraq through domains theory. It also attempts to find how the domains theory supports L2 learners in identifying meanings related to lexical concepts. Accordingly, an experimental study is conducted on fifty-eight university students of the second year level from the University of Baghdad, Iraq. The pre and post-tests are analyzed by using the Editor for the Statistical Package for Social Sciences (SPSS). The results show the following: First, a progression of more than $(0.05 \leq)$ is discovered in terms of students' understanding of the interrelationships between lexical concepts. Second, a new vision is dealt with to connect lexical concepts with their meanings according to the focus of the speakers using Langacker's theory. Third, domains theory (profile/ base organization, active zone, and the perceptual basis for knowledge representation) has proven effective in expanding Iraqi students' treatment and perception of semantic domains of English lexical concepts precisely.

Keywords: Cognitive semantics, domains, Iraqi Learners, encyclopedic view of meaning, active zone, knowledge representation.

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Introduction

Relying on the supposition that lexical concept cannot be understood autonomously of greater knowledge constructions, that meaning is encyclopedic, Langacker (1987) sets his theory of Domains in order to shed light on the interrelations among a lexical concepts and their meanings. Aajami (2019) uses this theory in order to expand the vocabulary for Iraqi students. Thus, she finds that the theory of domains can offer a considerable benefit in vocabulary learning. The second part of this theory (profile/ base organization and active zone) increases learners' awareness in analyzing the contextual meanings of lexical concepts.

In Iraq, English learners as a second language (ESL) amplify their vocabularies incidentally throughout the four skills of language teaching (Aajami, 2019). They face the same difficulties experienced by the other L2 learners in comprehending the polysemy of the English preposition (Aajami, 2018). Increasing the volume and value of word knowledge is a significant objective of learning a second or foreign language (L2). For mature learners at Level 2, reading provides a chance to learn the meanings of words and broaden the linguistic inventory of the reader. Actually, how reading processes help in developing the memory effects that represent knowledge of new words is not entirely clear, nor is the nature of the lexical content of this knowledge. (Elgort, et al., 2014). They (also find that acquiring words from context includes language practices that can create recalls for unacquainted words and the situation in which they are spoken. These processes are labelled in the instance-based context of vocabulary learning (Bolger, Balass, Landen, & Perfetti, 2008), according to Reichle and Perfetti's (2003) adjustment of Hintzman's (1986) retention archetypal.

Acquiring L2 seems to be causing a lot of problems for learners as well as their surroundings. Nasser (2020) asserts that semantic difficulties can cause confusion for Iraqi EFL students during their search for word meaning. Does this mean that one should not learn more than one language? Absolutely not! There are a number of solutions that could tackle the issue of learning vocabulary in a foreign language or analyzing deep meanings and connecting between a word and its related domains and polysemy. One of these solutions is the theory of domains that proves its effectiveness in increasing the Iraqi L2 learners' vocabulary (Aajami 2019). This study is going to use Langacker's cognitive linguistic theory of domains (1987) in order to enhance the way Iraqi L2 learners grasp the encyclopedic view of meaning, which proves that word meaning cannot be understood independently of the vast system of encyclopedic knowledge to which it is linked. This research tries to detect the reasonability of using the Domains theory 'the encyclopedic view of meaning's in order to get a deep understanding of the semantic connectivity among words, identify the base, profile, active zone, and the perceptual basis of knowledge representation.

Literature Review

Theory of Domains

The concept of the *domain* was first used in (1987) by Langacker, who was influenced by the theory of Frame Semantics by Fillmore (Clausner & Croft, 1999). Both Fillmore's and Langacker's theories are depending on the presupposition that meaning is encyclopedic and that lexical concepts cannot be implicit only by depending on larger knowledge structures, which are called "domains" by Langacker (Evans & Green, 2006, p.230).

"Domains are essentially cognitive units: mental experiences, representative spaces, notions, or conceptual multiplexes" (Langacker, 1987, p. 147). Langacker's defines domains by depending on humans' mind analysis of language. If an element of knowledge structure represents background information against which a lexical concept can be understood and used in language, then this knowledge structure can be considered as a domain. For example, the domain of *love* has three different expressions: *sex*, *feelings*, and *human affairs*. These expressions cannot be understood without understanding *human psychology* (Evans & Green, 2006, p.230).

The theory of domain is vastly insightful and helps in acquiring the meaning in both the source and target languages. It certainly enhances the value of language usage (Lowe, 2008, P.1).

Langacker (1987) focuses on four essential aspects of the theory of domains. These aspects are considered additions in comparison to Fillmore's theory of Frame Semantics. First, the typical arrangements of fields that construct a set of lexical concepts are entitled the "matrix domain" of that concept. For instance, the commonsense knowledge of the lexical concept *car* includes its shape, activities, physical material, and usage. These aspects of the word *cow* are identified in diverse subtexts (Clausner & Croft, 1999, p.6). Second, most of the lexical items can be described in terms of domain matrix while very few of them can be described in terms of a single domain. Third, Langacker (1987) addresses both the basic and abstract domains. He develops the level of conceptual organization that is not explicit enough in the theory of Frame Semantics. Fourth, some domains are organized to one or more dimensions. Domains such as *time and temperature* are arranged along one dimension and therefore are entitled one-dimensional domain. (Aajami 2019).

In this study, the concentration is on the different meanings of lexical concepts in the context. Langacker (1987) mentions and explains the scope, profile, and base. This organization analyzes the speaker's intensions and meanings interrelations. For example; the lexical concept behind the word *diameter* is that the line that cuts the circle into two points and passes through its center. Diameter here provides the essential knowledge, so it is named the scope of the lexical concept. The scope is sub-divided into two items: the profile and the base, which are important to understand the meaning of the lexical concept. The base is the essential part which is the circle in this example, and the profile is the diameter that has its relation to the base. One base can generate many profiles. The profiles can be a diameter, radius, arc, center, or chord. Profiles change when the main concept is changed; in other words when one talks about the circle, the profiles will be as mentioned above. If one mentions the circle to describe the wheel of a car, then the profiles that emerge from this base are different from that of the circle. Although they both have the same basic profiles, the wheel has more profiles according to its usage.

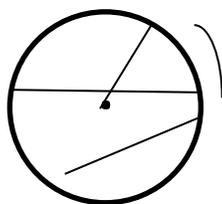


Figure 1. The base/ profile organization

This Figure is set by the researcher

Langacker (1987) also discusses the active zone. He finds that "the meaning associated with a lexical item undergoes 'modulation' as a result of the context in which it is used". The active zone is one active part of the profile that is repeated in particular utterances. The active zone helps in clarifying the meanings and intentions for both the speaker and the hearer.

For example; *the goal keeper protects his goal by his **hands**.*

*The goal keeper protects his goal by his **head**.*

*The goal keeper protects his goal by his **legs**.*

*The goal keeper protects his goal by his **knees**.*

*The goal keeper protects his goal by his **back**.*

*The goal keeper protects his goal by his **abdomen**.*

*The goal keeper protects his goal by his **bottom**.*



Figure 2. The active zone of the goal keeper

This Figure is taken from Google images. (Goalkeeper Cartoon, 2020)

The active zones are represented through the body parts of the goal keepers that prevent football from entering his goal. The active zone can play another important role which is that of clarifying the contradiction in sentences like the following:

"*This green pen is not green*" This sentence can be interpreted into two assumptions; the first is that the green pen, which has a green color from outside, does not have a green ink. Or the pen that has green ink is colored blue, red, or any color from outside except the green one.

Langacker (1987) talks about the perceptual basis of knowledge representation. Barsalou (1999) further discusses this point that there is a mutual figurative structure that causes both **perception**. **These include first** our ability to treat a sensory input from the internal body or the external world proclaims such as consciousness or experience of pain. Second, our **cognition**, which is our aptitude to get this experience available to the theoretical system by representing it as thoughts, along with processing the information that acts on those concepts. For example:

Hani was walking under the rain".

When the hearer hears this example, he imagines the picture in his mind and if he has a good imagination, he maybe portray the cold feeling that Hani suffered from. Another example is:

"the warning siren is on".

When some people are walking in the street, no one will respond to the warning siren except those who know the meaning of this sound.



Figure 3. The relation between perception and cognition.
This Figure is taken from Google images (Ebert, 2005).

Previous Works:

A great part of word meanings analysis has been accumulated to serve the semantic purposes in identifying words meaning in both perceptual and cognitive aspects. Haiman (1980) defines the encyclopedic meaning as the "indirect", non-referential, additive meaning of a sign pertaining to an encyclopedic knowledge of the world. Often encyclopedic meaning is central to the understanding of that sign even though it is not traditionally considered to be a linguistic type factor. Encyclopedic meaning overlaps with the notions of connotation, semantic frame, and several concepts relating to the scope of predication.

Taylor (2018) declares that the meaning of the dictionary differs from encyclopedic meaning. He identifies the relationship between dictionary and word meanings. Both of them, the dictionary and the encyclopedia, are of different types of books. The meaning of the dictionary gives one word and its meanings. The encyclopedic meaning gives all kinds of scientific, cultural, and historical information about things.

The encyclopedic view of meaning needs the encyclopedic knowledge that is used to mention that the information of the world is distinctive from language system knowledge. The encyclopedic view is a model for the system of conceptual knowledge on which linguistic meaning is based. This system shows an insightful part in the way humans make sensations during communications (Kecskes, 2013).

Vyvyan (2006) addresses the role of words in constructing meaning. He starts from the fact that "meanings" related to words are mastered in nature, and that semantic standards related to words are flexible, open-ended and greatly reliant on the context of speech in which they are contained. In an attempt to dilver an explanation of meaning formation that conforms to this observation, he developed a realistic epistemology for lexical representation and a programming theory for the lexical concept combination. His main assumption is a basis to distinguish among lexical concepts

and meanings. Where lexical concepts constitute semantic units traditionally related to linguistic forms and are an essential part of the individual user's mental grammar, meaning is an attribute of positional use events, not words. Thus, meaning is not a function of language by itself, but rather it emerges from the language usage. Meaning provides an explanation of the lexical concepts, conceptual knowledge structures, and cognitive models related to them. It also puts this theory inside a use-based account. It then develops the lexical concept integration theory that assists to afford an interpretation of how lexical concepts can be incorporated into the service of the current meaning construction.

The results of the study of the cognitive and motivational meanings of words indicate that a person who speaks more than one language has much better cognitive capabilities compared to what was anticipated from his logical level in childhood. The sturdiest influences were in general cleverness and reading dexterity. This phenomenon is originated in both those who acquire a foreign language before the age of 18 and those who get it at farther age. Meaning can transport both emotional and cognitive language like these phrases "Before the New Deal, the Great Society, Obamacare, and other socialist garbage, the patients had just rewarded their health center." (Kazemifard et al., 2012, p 24).

Manerko (2014) concluded that cognitive linguistics offered a new approach to understanding different concepts. The interdisciplinary, expansion of the methodological view and knowledge methods for describing resulted in a process of continuous interaction. It influenced the science of terminology, which made it possible to obtain the status of a scientific discipline and to include vocabulary as a specific subject. Cognitive linguistics theory is now definitely able to find its way on the basis of cognitive terms. It became possible to concentrate on the basic features of the vocabulary, allowing to show its nature and relationship from a cognitive and communicative point of view

Hagoort (2019) found that meanings have multiple sides; However, one needs to make a separation between the meanings of a single word (the lexical meaning) and the meanings of a multi-word pronunciation. Polyphonic words cannot be retrieved from memory but must be constructed quickly. The automatic computation of the mind that makes sense requires analysis at the functional and neurological levels because these levels are causally interconnected.

Most of the words that have multiple meanings are confusing. This applies to both homonym words (words that have several dissimilar meanings) and polysemic words (words that have many associated meanings). Existing suggestion shows that the choice of meaning is an essential chunk of understanding homonym. Nevertheless, it has not been established whether meaning choice covers words with multiple meanings, or what neural systems sustenance meaning selection during comprehension. Both the meanings of polysemy words and the meanings of homonyms are similar as they are chosen based on contexts. However, homogeneous and polysemic words varied with respect to the way the meaning influences the meaning of choice. They came to the conclusion that context-dependent meaning assortment is an basic portion of understanding words for both homonyms and polymorphic words. (Bendy, et al., 2006).

Hendriks (2019) conducts a study of how children create meaning from a series of patterns or sounds. Due to the concept of luminous formation, the meaning of a statement is a function of its parts meanings and their grammatical combination. On the contrary, it appears that children often ignore the grammatical structure in the interpretations of their sentences, signifying that grammar is simply one of the bases of information restricting meaning that does not have a distinct position. According to the principle of composition, utterers and hearers generally agree on the meanings of sentences. Remarkably, children as hearers do not often comprehend what they can produce as utterers, and vice versa. For instance, it seems that children's construction of word order established before they understood word order in acquiring languages such as English and Dutch. This inconsistency in construction and understanding is common in children's language. It also stimulates the formation of point of view as a principle related to the outcome of the adoption of perspective, the formation of meaning as a method of coordination between the speaker and the listener.

All these studies treat the cognitive semantic of words meaning and how humans vary in acquiring their cognitive language proficiency.

The Experiment

This study targets at developing Iraqi students' consciousness of Langacker's theory of domains and developing their comprehension in gaining the semantics of English words throughout contexts. It also aims at showing the possible meanings of different utterances; revealing specific difficulties in using English expressions; examining the Iraqi students' ability to differentiate and produce correct expressions in English and identify their parts, and investigating how cognitive linguistics help EFL students' understand the English expressions in their writings and speech contexts.

The present study is an experimental which is premeditated in the pre-test and the post-test. Fifty-eight students contributed in this study. The researcher checks students' information about the theory of domains. Such a step was achieved by refreshing the participants' memory of the related meanings of some English words throughout the multiple frequencies of occurrence of each word in different forms within the same domain. She used the blended learning method in order to help all of the participants to easily participate in this experiment. To complete the aim in question, the researcher plans an experiment of three phases:

- The first phase: it is a refreshment phase because there are students who had participated in the previous study of the theory of domains. The researcher revitalized the participants' memory of the domains theory via giving a brain storming task. She posted, for example, words, such as: *uncle, peace, nutrition, temperature, home, feelings*. Then, she divided the participants into groups, each group should have at least one student who had participated in the previous study of the theory of domains, had to analyze and draw diagrams for these lexical items to show their related meanings;
- After the refreshment phase comes the introductory phase. This phase is a good choice for the students to be introduced to the main points in this study (profile/ base organization, active zone, and perceptual basis of knowledge representation).

- The third phase, the pre-test, is designed to analyze the meanings and frequencies of the same words in different sentences. The participants were requested to test the polysemous meanings for the matrix domain, as shown below:

"In kick boxing, the player can use different parts of his body to protect himself and defeat his rival".

The base here is the "kick boxing game"; everything related to this game is a profile. Accordingly, this relation is very similar to domain and domain matrix relation. The active zone is any part that the player used in the game as:

"The player pushed his rival"

the player kicked his rival",

the player boxed his rival".

The perceptual basis of knowledge representation can be explained as the following: all the sentences in the example of "the kick boxing game" create a series of imagination in the speaker and the addressee's minds depending on their real knowledge and experience about this game.

- The fourth phase, the post-test, is designed to test the lexical concepts in terms of profile/ base organization, active zone, and perceptual basis of knowledge representation.

Participants and Procedures

The contributors were fifty-eight second year students who were generally of intermediate level in English language. Some of the participants did not know anything about the theory of domains before participating in this experiment while others had the chance to participate in the previous experiment. They were about 28 students who have the chance to participate in the study. The procedures were done as shown below:

- The researcher displayed PowerPoint slides in the classroom to explain the aspects of the domains Model and its characteristics as a kind of refreshment;
- Then, a handout was distributed to the participants; it contained a detailed explanation of the theory;
- Students were asked to work in groups during class time to identify the profile/ base organization, active zone, and perceptual basis of knowledge representation. In order to achieve a high level of participation, WhatsApp groups are held. The researcher sent two or more sentences about a lexical concept, for students to practice analyzing the main meaning and identifying its domains in addition to elucidating the profile/ base organization, active zone, and perceptual basis of knowledge representation. They could also clarify the related domains throughout diagrams. They were also required to locate the dimensions and configurations of these domains;
- The researcher asked the students to identify the base/ profile, and active zone for any given lexical concept in different sentences and elicit their related domains. Then, they conducted the posttest in accordance with the steps set in the procedures.

Target Words

Five panelists selected the examples to be applied when explaining the theory of domain. Each example had a clear hint to the base/profile organization, active zone, and perception and cognition. Starting with simple clear practices during applying the theory of domains helped the students to understand the basis of this domain. Then, they had to freely think in other examples

to elicit and explain the principles. The lexical concepts were chosen to test the effect of the theory of domains in explaining and analyzing meaning.

Results of the Pre-test

Fifty-eight marks were composed by the researcher in the initial investigation of students' capacities to interpret and analyze the meanings of 1. *The blue pen is not blue.* 2. *Each angle is 90 degree in the square.* 3. *What is football?* It was noticed that the participants had limited aptitude in analyzing the meaning of the above mentioned utterances. Their limitations were drastic when identifying the semantic relations among these phrases. Besides, they neither could identify the base/ profile organization, nor were able to explain the contradictory in sentence number (2) by depending on the active zone assessment in the theory of domains. Their analysis of the number (3) example did not cover the whole meaning of this game according to what is called "perceptual basis of knowledge representation" in the theory of domains.

The outcome of the pre-test exposed that all students had a developing, but not developed clues about the domains theory and its insights. It is clear that students relied on their information in both the first and introductory phases when representing the ideas or roles that were related to the meaning interrelation of the lexical concepts.

Treatment

The treatment stage began soon after the results of the pre-test. The target codes of theory were embedded in some different sentences. These codes appeared in different utterances to present different interrelated maps of meaning.

The participants were asked to analyze the different meanings of each lexical concept and identify each code, profile/ base organization, active zone, and perceptual basis of knowledge representation. They had to get the meaning interrelations of the lexical concept in each sentence, and classify the direct related code. Sinking deep into the semantics of the lexical concepts helps gain more control in the usage of new words and avoiding contradictory. Eliciting a lexical concept from a given image and identifying the surrounded domains enhance the learners' ability to analyze the domains of any lexical concept in addition to the. Thus, knowing the kind of code is an important second step in the semantic analysis of this approach, if one assumes treating the domains skillfully as a first step. During the class time, the participants worked individually and in groups. Each group prepared representations about a chosen lexical concept with a clear explained example to represent one of the three codes of the theory that help in identifying the code and its characteristics. After being able to identify profile/ base organization, active zone, and perceptual basis of knowledge representation, they were asked to analyze the meaning of each code in a diagram. They also classified the meaning intricacy or the interrelated meanings of each lexical concept.

The participants involved in activities were asked to complete some drawings depending on the given sentences. Then, they had to explore the meaning of the lexical concept of the given drawing; e.g. students were given worksheets that contain incomplete drawing of an eagle. They had to complete it in a most suitable way according to their understanding. The base is the eagle that gives many profiles. In an additional step, they had to answer comprehensive questions or write a

short summary to explain the meanings in details. Students were asked to prepare a complete project about a given lexical concept. The activities were designed just for the participant to be more motivated and exposed to the target codes of the theory of domains. This study was projected to evaluate the influence of domains theory in identifying the meanings of lexical concepts with respect to domains and vocabulary learning. After twenty-four sessions of treatment, the students were allowed to sit for the post-test.

Post-Test

After two months of working on the domains theory; three meetings each week, the participants sat for the post-test. They were asked to analyze the lexical concepts through contexts. They had to identify the semantic relations of lexical concept in the light of profile/ base organization, active zone, and perceptual basis of knowledge representation two.

Low model analysis is used to represent the domains of the lexical concepts in diagrams. Through the results of the post-test, the partakers displayed an extraordinary advance in identifying base, profile, active zone, perception and cognition. They accomplished a distinguished alertness in determining the kinds and merits of domains. They were able to grip the superficial and deep meanings of the semantic interrelations of the lexical concepts. Their ability appeared in avoiding the contradictory utterances by analyzing their meanings in details. They were also capable of eliciting and differentiating between perception and cognition and how motor or somatosensory experience affected their mental treatment of meanings. In other words, it was possible to admit as Langacker (1987) says, "conceptual representation is perceptual in nature".

Data Analysis

The obtained results from both the pre-test and post-test were examined to two SPSS statistical editor tests. Each quiz compared the presentation of all students when treating the codes of the domains theory. Table 1 displays the elementary expressive statistics of the pre-test scores of the participants. In this table, the number of students and their average score are described, along with other statistical variables.

T-Test

Table 1. *Paired Samples Statistics*

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	13.1667	58	5.35037	.97684
	Posttest	17.4333	58	3.99727	.72980

Table 2. *Paired Samples Correlations*

	N	Correlation	Sig.
Pair 1 pretest & posttest	58	.825	.000

Table 1 shows the number of participants, which is 58, and their average in the pre-test is 13.1667 and the post-test is 17.4333. Participants showed a score of 4.2666. Since the difference between the two scores in both tests showed greater progression than (0, 05) *, this study is valid. This means that the domain theory can bring about a noticeable positive change in participants' understanding and use of English lexical concepts.

Discussion

The results of the study show that Iraqi learners boost their ability in acquiring new words by using the theory of domains. This is because the theory depends on finding the closest words in meaning and analyzing meaning to avoid elusiveness. This process of research and analysis can certainly expand learners' vocabulary and fortify the intricacy of meaning interrelations in their minds. Occasionally, much more effort and analysis is needed to cement the basics of the theory and its codes, profile/ base organization, active zone, and perceptual basis of knowledge presentation. Unsurprisingly, the participants fascinate a new strategy and flexible perspective in reaching L2 surface and deep meanings relations. Consequently, they can open more and more windows for vocabulary learning during their analysis or search about vocabularies. They can enrich their background information. It is really that the learners get in-depth understanding of the semantic complexes of the lexical concepts throughout their work on the domains theory.

Limitation of the Study

This study is limited to second-year students at the department of English at the University of Baghdad in the academic year 2019/2020. The participants were 58 second-year students in the Department of English, College of Education for Women, University of Baghdad. The study was conducted during the academic year 2019-2020. The study was limited to enhancing vocabulary multiple meanings and related meanings.

Conclusion

Domains theory can offer a considerable benefit in learning vocabulary. This study highlights the importance of active zone, profile/ base organization and perceptual base of knowledge presentation. It highlights both practical and intellectual aspects of cognitive linguistics. Unlike other studies which concentrate on either practical methodological aspect or theoretical abstract ones. Showing the possible meanings of different utterances help in revealing specific difficulties in using English expressions for Iraqi L2 learners. Meanings can be represented in drawn figures, images, and signs consequently these variety of meanings representation enlarge the medium of communication and create deep level of comprehension. Examining the Iraqi students' ability to differentiate and produce correct expressions in English and identify their parts by substituting the parts of a sentence with other words from the same lexical field. The experiment investigates how cognitive linguistics help EFL students' understand the English expressions in their writings and speech contexts. Based on the results the understanding, usage, and interrelation of English language can be outreached in a more comprehensible way throughout adopting cognitive linguistic theories.

Concerning the number of contributors and the number of discussed examples, this study is very limited. The aspiring results of the participants can inspire further research studies, and to apply the theory of domains with other groups of learners in different places.

Recommendation

According to the results of this study, the following points are recommended:

- Using the domains theory in comprehension class can better up the students' performance and expand their views in treating meanings' relationships.
- Training sessions for both teachers and researchers can improve the English acquisition process.

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Appendix A

1. Draw a diagram for the lexical concept " plane" to identify its base and profiles.
2. Identify the active zones in completing the following sentence:

I went to England

3. Identify the following shape, its base and profiles, related domains and dimensions.



3. Think of the following sentences and analyze them in terms of perception and cognition?

1. I used to ride my bike and tour near the river.
2. A smith needs an oven.
3. Do you think that the shape of our country will change after the American Iranian conflict started.
4. children can understand words or sentences before they can utter utterances.