

Semantics, Cognitive Semantics and Lexical Cognitive Semantics in Language and Dialects

✉ BEBHALILEM Nouredine

Senior Lecturer at University of Sidi Belabbes (Algeria)

research_78@yahoo.fr

✉ BENMOUSSAT Nabil

Lecturer, at University of Sidi Belabbes (Algeria)

nabilbenmoussat13@gmail.com

ABSTRACT:

This article aims to distinguish between the concepts of formal semantics, lexical semantics, cognitive semantics and cognitive lexical semantics. By definition these terms carry nuanced and profound meanings, depending on their respective fields of study in languages and dialects. Words, lexemes, or concepts are employed differently across disciplines and serve as central elements in these areas of research.

KEYWORDS: language; dialect; concepts; micro-sense; sub-sense.

الدلالة اللغوية والدلالة الإدراكية والدلالة المعجمية الإدراكية في اللغة واللهجات

✉ بن حليم نورالدين

أستاذ محاضر - أ - جامعة سيدي بلعباس - الجزائر

research_78@yahoo.fr

✉ بن موسات نبيل

أستاذ محاضر - ب - جامعة سيدي بلعباس - الجزائر

nabilbenmoussat13@gmail.com

ملخص البحث

إن التمييز بين مصطلحات مثل الدلالة الصورية والدلالة المعجمية والدلالة الإدراكية والدلالة المعجمية الإدراكية هو الهدف الأساسي لهذا المقال. بحكم التعريف تحمل هذه المفاهيم شحنة معرفية عميقة وخاصة للمعنى بحسب مجال البحث فيها. تُستعمل مصطلحات مثل الكلمة واللكسيم والمفهوم اعتمادا على التخصصات المختلفة وهي بمثابة كونها مفاتيح لهذه الميادين من المعرفة.

الكلمات المفتاحية: اللغة، اللهجات، المفهوم، المدلول الدقيق، المدلول الفرعي.

1. Introduction

The relation of meaning to word form has become an old idea in the modern field of linguistics. Semantics is the study of meaning communicated through language mostly in descriptive linguistics. The turn has become more extensively useful in the recent following years of the generative school.

Cognitive semantics and cognitive linguistics gave great impetus to language investigation in which research about meaning exceeded the form to concept i.e., words denote concepts, units of meaning which represent the psychological orientation and is concerned with the cognitive status of processes and representations employed by speakers of the language and dialect in communication.

Terms like formal semantics, lexical semantics, cognitive semantics and lexical cognitive semantics are now clearly distinguished and viewed through the lens of contemporary academic disciplines but they all refer to the single and intrinsically relationship of form-meaning pairing.

Words and expressions which are widely used in contemporary conversations have meaning by convention which invites the questions: How does the convention get established? And how are they stored in the human minds of the speakers?

2. Formal semantics and lexical semantics

In the Western Classical Tradition of linguistics and the Classical Tradition of Arabic Grammarians, lexical semantics began with etymologies and glossaries of literary works that gave way to word lists with attributed meanings resembling modern dictionaries; seeking to map the diachronic development of the meanings and forms of the word, the ancients sought to explain the meaning of the word in terms of its perceived component forms (Robins, 1997, p.27). These explanations in ancient etymologies are most often faulty; they do focus attention on the meaning of the word and on the existence of lexical networks which are memorized as a combination of form and meaning.

The modern use of the term *semantics* goes back to Michel Bréal in which he defines it as ‘the science of significations’ (Breal, 1883, p.133). Those researches gave birth to new tendencies of understanding meaning with no reference to etymological resources i.e., the search for mythical ‘true meaning’ gave way to a search for the patterns and causes of semantic change.

Formal semantics is an approach that focuses on the relationship between linguistic expressions and the situations they describe. To understand the meaning of a sentence like “*It’s raining in London,*” one must grasp what kind of real-world situation this sentence would correspond to. If the described situation actually occurs, the sentence is considered true; if not, it is false — a view known as truth-conditional semantics. In essence, formal semantics aims to identify types of meaning that can be expressed through logical representation. (Kneale, 1962; Quine, 1961; Wittgenstein, 1953). Basically, formal semantics focused on how sentences might be translated into logical meta-language, and how this logic can be given a denotational semantics because logic has such an important advantage of precision. The aim of this approach is not just to convert between the representations made in natural languages and semantic analysis but to seek to connect language to the world.

Many linguists in favour of logical approaches to semantics would claim that: (1) in its attention to declarative sentences, a logical approach promises a formalization of an important subset of natural language sentences, and (2) a logical approach permits a degree of rigour and formalization which entirely outstrips that of the more descriptive approaches to meaning.

For the lexical semantics discipline, it is the study of what words mean; lexical relations and sense relations (the vocabulary of a language or “**lexicon**”) (see Murphy, 2003 for an overview). As a position in contrast to formal semantics; it studies the open class words like nouns, adjectives and

verbs as opposed to the closed class words like quantifiers, connectives and prepositions which contribute to the logical structure of the language.

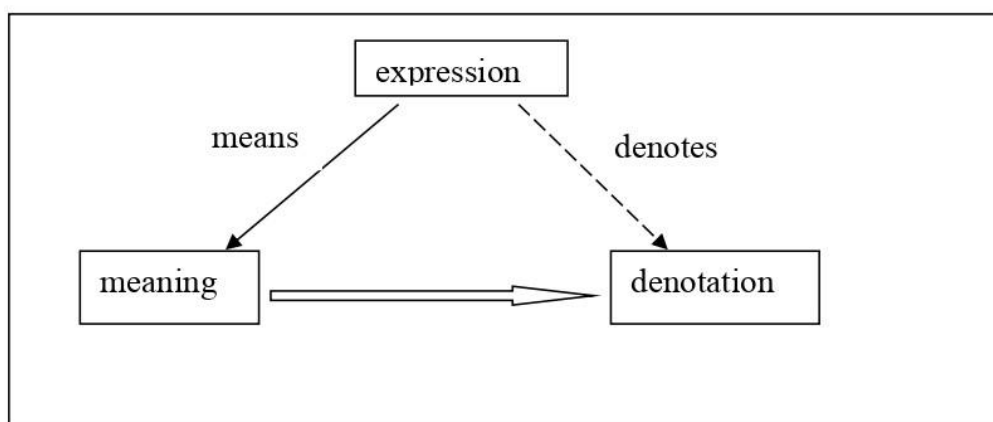
Lexical semanticists generally operated independently from formal semanticists, whose main concern was sentence or discourse-level meaning and the issue of compositionality. While formal semanticists examined how meanings combine, lexical semanticists focused on topics such as argument structure, verbal changes in meaning caused by alterations in argument structure, polysemy, and the decomposition of meaning. However, their research was often conducted within different “cognitive” frameworks that lacked formal precision and clear connections to model-theoretic semantics (Asher, 2016). Recently, however, formal semanticists have begun to take a closer look at the interesting observations by descriptive linguists.

Word forms or **lexemes** are the basis of any study in lexical semantics. They are individuated by their form whether phonological or graphic; so, *drink*, *drinks*, *drunk*, *drank*, *drinking* are word forms belonging to the same lexeme **drink**. A lexeme is a significant unit in lexical semantics. It is decisively important for lexicologists and lexicographers to tackle issues including discriminating between homonymy and polysemy; representing lexical relations like synonymy, antonymy, hyponymy; and accounting for the role of context (Frawley et al., 2002).

2. The cognitive turn of semantics

While semantics in the wider tradition of structuralism aims at a description of meaning relations, the cognitive approach focuses on meanings themselves. Cognitive linguists (like Lakoff, 1987; Langacker, 2008) reject what they term objectivism: the idea that language directly models or maps reality. They disagree fundamentally with the formal approaches of semantics. Meaning, in cognitive linguistics, therefore goes well beyond matters of reference and truth conditions. Cognitive linguists assert that meaning relies on conceptualization, which underlines how a speaker construes a situation. So, the semantic structures are themselves conceptual structures. In this respect, the cognitive semantic approach deals with concepts and conceptual representations which are generated from word meanings i.e., concepts of words are prompts to access the cognitive system and the emphasis is on the exploration on the concepts and categories we use. Cognitive semantics equates meaning with conceptualization and thus incorporates an encyclopaedic view on meaning which opposes the idea of truth conditional meaning. The base of the triangle in figure 1 represents the cognitive side of semantics in the semiotic triangle (adapted from).

Figure 1: The focus of cognitive semantics



Source: Lobner, 2002, p.172.

In the cognitive linguistics literature, all the expressions (no matter how simplex or complex they are) are considered to be “symbolic units” or symbolic form-meaning pairings and they are inherently meaningful.

2.1. The encyclopaedic Vs the dictionary meaning

For lexicologists and lexicographers, by definition a word like *bachelor* has a central meaning which is ‘unmarried adult male’ represented as [+MALE, +ADULT, –MARRIED] while *man* is [+MALE, +ADULT], *wife* is [–MALE, +ADULT, +MARRIED] and *girl* is [–MALE, –ADULT]. The words *bachelor*, *man*, *wife* and *girl* are semantic primitives or **primes** as labeled by Anna Wierzbicka (1996). However, encyclopaedic knowledge is not only dictionary knowledge but falls within the field of pragmatics and is governed by the principles of language use.

It is generally assumed that the meaning linked to linguistic forms is encyclopaedic in nature, potentially including any kind of knowledge related to those forms (Geeraerts, 2010). In contrast, dictionary knowledge treats word meanings as relatively concise and limited. If, however, every piece of encyclopaedic information connected to a word were considered part of its meaning, the human brain would likely find such an amount of information impossible to handle efficiently and hardly processed.

From an encyclopaedic standpoint, a word like **run** which is a manner of motion of an entity designating a goal of movement may give rise to a much more extensive network of idiomatic and metaphorical uses than other verbs like **walk**, **jog** or **lope**; moreover, the individual senses of run as Gries (2006) set “turn out to be associated with distinctive lexico-syntactic contexts”. Clearly, it is difficult to draw a precise line between the information that constitutes a word’s core dictionary meaning and the encyclopaedic knowledge we possess about what that word refers to.

2.2. The prototype and the ICM

The roots of the prototype theory go back to the outstanding theoretical works of Eleanor Rosch and her co-workers (see Rosch, 1973, 1978; Rosch and Mervis, 1975). This theory concerns how we categorize concepts, emphasizing that category membership is not absolute but graded, which is the core idea of the prototype theory of categorization. Cognitive psychologists have shown that, for many categories, certain examples are consistently seen as better or more representative members than others. These highly typical instances, which tend to come to mind first, are known as **prototypes**. In short, members of a category differ in how representative they are of that category.

Let’s take the example of *bird* which is widely used in the cognitive semantics literature. *Robin* is the best example of the category *bird* (**Goodness-Of-Exemplar**). It is thus the **prototype** because it exhibits all the features that make up the prototype: having wings and feathers and being able to fly as well as the properties of singing, having a beak, laying eggs and hatching them in a nest. Features can be weighted according to their contribution to centrality (prototype), and such versions will set an overall weighting score as a qualification for category membership. It is possible that no existing member of a category possesses all the prototype features. There must be a bundle of **attributes** that represent important aspects of ‘birdiness’. Intermediate and bad examples of the category *bird* differ from these prototypical examples in two ways: “either they deviate to a moderate degree with regard to one or more attributes (think of the parrot’s legs and tail) or some attributes are missing altogether (e.g., ostriches cannot fly)” (Ungerer & Schmid, 2006, p.27). Cognitive semantics deals not only with examining individual categories, but also with understanding the relationships among the different categories that can be expressed by a single word.

The theory of **idealised cognitive models** (or ICMs for short), on the other hand, represents one of the early frameworks that helped define cognitive semantics as a research programme

(Lakoff, 1987). The notion of ICM is meant to capture the contribution of encyclopaedic knowledge to our understanding of concepts.

ICMs are relatively stable knowledge structures that are built up on the basis of repeated experience. If we take again the word *bachelor*; as an ICM does not reflect the way the world actually is because the ICM clashes with a world which contains priests, homosexuals, polygamists (like the Islamic countries) and so on. Cognitive semantics focuses not only on the study of individual categories, but also on how multiple categories linked to the same word are related to one another. The list below justifies almost these types (Croft & Cruse, 2004, p.28):

- a. The Pope
- b. Tarzan
- c. An adult male living with his girlfriend
- d. A male homosexual
- e. A male homosexual living with his boyfriend
- f. A seventeen-year-old living on his own, running his own internet firm, and dating several women. [cf. a seventeen-year-old living with his parents and going to school, who virtually all agree is not a bachelor]

So, the frame for the ICM *bachelor* is simpler than the reality that often does not match the idealization.

The meaning of a word can thus be understood as a particular perspective on our knowledge of the world, shaped by the concept that the word highlights. This understanding of word meaning closely resembles the cognitive psychology view of a conceptual category as a way of accessing additional information related to that category. This view of word meaning also highlights how choosing a word is “a way of construing the relationship between the experience being communicated and the interlocutors’ existing knowledge” (Croft & Cruse, 2004, p.30). Thus, the real world has many cases where only parts of the cluster model for *BACHELOR* apply to particular individuals.

3. Cognitive lexical semantics (CLS for short)

Among the problems which are set in cognitive semantics is the determination of the core meaning of words which is one aspect of a much wider problem in prototype theory. Moreover, “context sensitivity is another one. Lexical semanticists believe that there are other linguistic elements like modals and attitude verbs that may cause this sensitivity.” (Roberts, 1989; Veltman, 1996).

An example like (1) which is discussed at length in the semantic literature, in particular by Pustejovsky may raise an interpretation of its meaning depending on discourse and interaction between interlocutors.

- (1) Julie enjoyed the book.

Because of the choice of the verb *enjoy* in this context, one may interpret it as (2).

- (2) Julie enjoyed doing something to (e.g., reading, writing ...) the book.

Obviously, the choice of words affects the content of a predication; prior discourse can also sometimes affect how lexical meanings interact.

Cruse (2000) asserts the conceptual approach in identifying the meaning of a word. It is important to be able to decide whether two interpretations of a word in different contexts represent one semantic unit or two. In (3) one may take different interpretations of the word *book* because such readings may take different facets which are the physical object or text (content).

(3) I find this book unreadable.

Typically, those contexts create considerable evidence of facets and pass the ambiguity tests like the identity test, the independent truth-conditions test and the zeugma test.

It is generally assumed that speakers can readily access their mental lexicon, or internal store of vocabulary, although the precise nature of its organization and the mechanisms of its use remain only partially understood. Consequently, context plays a crucial role in determining the exact meaning of a word, often with remarkable speed. Current concerns in Cognitive Lexical Semantics (CLS) revolve around the question of whether word meaning directly corresponds to concepts, or whether there exists an intermediate semantic level that mediates between words and concepts.

The terms of micro-senses and sub-senses are widely used in the cognitive lexical semantics literature.

3.1. Micro-senses

By definition units that have a significant degree of autonomy but can be unified into a superordinate category will be termed 'micro-senses' (Croft & Cruse, 2004, p.116). Micro-senses are distinct sense units of a word that occur in different contexts and whose default construals stand in a relation of mutual incompatibility at the same hierarchical level. So, a micro-sense is a distinct clearly differentiated meaning of a word that is still considered part of the same lexical item (same dictionary entry) but has limited overlap with other senses. A typical example is the word *knife*; let's examine the sentences in (4):

- a. John called the waiter over to his table and complained that he had not been given a *knife* and fork.
- b. The attacker threatened the couple with a *knife*.

The context of the two sentences is different and thus the meanings of *knife* are different too; two different facets were engaged. In (4) a, the context of *knife* is the sort used at table when eating a meal while in (4) b *knife* is a weapon.

There is reason to believe that the mental representation of a word like *knife* is a collection of specific readings loosely held together under a sketchy superordinate umbrella, rather than as a schematic specification which is enriched in various ways in particular contexts (Cruse, 2000, p.119).

The word *knife* shows what Cruse term **default specificity**, that is, when we encounter it, our first assumption is that one of the specific construals is intended, and we look for evidence as to which one. Eventually micro-senses become contextually determined and they are mutually incompatible in a given context i.e., a word may switch between micro-senses depending on use but cannot activate multiple micro-senses at once, they are not simply shades of meaning but distinct enough to not be active together.

Using the Langackerian approach (Langacker, 1991) we can say that the word *knife* is used to designate a particular kind of *knife*; then this is metaphorically extended to refer to a distinct type of implement, with sufficient resemblance to the original to justify the use of the same word. Prototypically speaking we can say that it is the switch making from the basic level to the subordinate level when the meanings are decontextualized or even when the superordinate level categories of cutlery that have a rather schematic, impoverished nature, which is different from the rich content of typical basic level categories.

Further examples can be found in the American slangs of the word *dog*; in (5) the senses employed for this word are mutually exclusive: in any single use, only one meaning applies.

(5)

- a. She's a *dog*. (An unattractive person especially a woman)
- b. He's my *dog*. (A loyal friend or male companion)
- c. He cheated again, he's such a *dog*. (Someone who behaves badly, often in relationships)

3.1. Sub-senses

A lower level of both discreteness and antagonism of full senses are called sub-senses; they have specific readings, and they are relatively rich and clearly defined (Cruse, 2000, p.119). Sub-senses function like senses within their home domain. A sub-sense is a less sharply distinct meaning. Sub-senses are closely related nuances of a core sense. They are compatible and may coexist in the same context. Let's take Cruse's treatment of *book* in (6) (Cruse 2000 & Croft & Cruse, 2004).

(6) I read a *book* yesterday.

The meaning of a word may shift toward emphasizing either the physical object or its content, but these variations represent sub-senses rather than distinct micro-senses. Unlike micro-senses, sub-senses share a single conceptual core, and moving between them does not result in any contradiction. Sub-senses therefore represent subtle adjustments or modulations of meaning — they are compatible with one another, and while context may highlight one specific sub-sense, the others often remain potentially active or implied.

Examples from some American dialects and slangs can enrich these ideas of sub-senses. Meanings of the word *cool* do overlap slightly, though all involve positive evaluation, so that they are not completely distinct as in (7):

(7)

- a. That jacket is *cool*. (Fashionable or stylish)
- b. Stay *cool* under pressure. (Calm or unfazed)
- c. That concert was *cool*. (Excellent or impressive)

This is a very general picture from the point of view of CLS: there seems little to be said at the lexical level isolated from other cognitive insights; a word does not have a fixed list of meaning but rather a network of related concepts in which micro-senses become distinct nodes in that network and sub-senses are shades within node variations of the same mental concept.

4. Conclusion

One of the most compelling motivations for advancing research in semantics lies in the pervasive ambiguity that emerges in everyday language use (the standard language and the dialects). Meanings that are often assumed to be stable and transparent can shift significantly depending on context and usage.

Despite extensive inquiry, many intricate aspects of the lexicon remain only partially understood, with several currently the focus of rigorous investigation, particularly within the field of cognitive linguistics.

Moreover, a deeper understanding of lexical meaning in context-specific uses has prompted computational linguists to call for revisions to modern linguistic frameworks — aimed at aligning them with the demands of language processing technologies that must encode and represent nuanced semantic knowledge.

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