

## COGNITIVE LINGUISTICS

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### Summary

Cognitive Linguistics is a reaction of modern linguists to truth-conditional (objectivist) semantics and generative grammar which have been the dominant approaches to the study of language meaning and grammatical form since the middle of the last century. Its major assumptions are that language is not an autonomous cognitive faculty but an integral part of human cognition and that linguistic knowledge of meaning and form is basically conceptual structure. Language is a distinct human cognitive ability but the cognitive processes responsible for the storage and retrieval of linguistic and non-linguistic knowledge are basically the same. As a consequence much cognitive linguistic research has focused on describing how concepts are organized (frames, domains, profiles, ICM) and the range of conceptualization or construal operations as instances of more general cognitive processes such as attention/salience, comparison, perspective, Gestalt. Both linguistic meaning and structure can be characterized by construal operations such as Langacker’s selection, figure/ground, viewpoint, scanning, etc. or Talmy’s force dynamics and image systems, Lakoff and Johnson’s theory of

metaphor and metonymy or image schemas. Ultimately, they all are grounded in our bodily experience, our need to make sense of the world and to communicate.

## **1. Introduction**

### **1.1. Setting up the scene: the cognitive ‘revolution’ and ‘counter-revolution’**

Cognitive linguistics encompasses a number of broadly compatible theoretical approaches to linguistic meaning and structure that share a common basis: the idea that language is an integral part of cognition and it reflects the interaction of cultural, psychological, and communicative factors which can only be understood in the context of a realistic view of conceptualization and mental processing.

Such a view runs contrary to the well established American and West European linguistic tradition, which has been devoted to establishing a body of logical rules for generating only the grammatically well-formed and semantically acceptable sentences of a language from a set of universal, possibly innate structures. In short, it runs contrary to the numerous successive versions of generative grammar and questions the very foundations of mainstream formal linguistics, which back in the late 50’s and 60’s was labeled as ‘cognitive revolution’. Paradoxically, it runs parallel to certain East European and Russian linguistic traditions. During the Cold War isolation Russian and other East European linguists remained dissociated from mainstream formal linguistic theories and developed home-grown semantic theories which share a great number of cognitive linguistic ideas (Rakhlina 1998).

#### **1.1.1. Formal syntax: The Mind as a Computer Metaphor**

The use of the term ‘cognitive’ for these two opposing theoretical frameworks demands some explanation. The ‘cognitive’ revolution performed by Chomsky and his followers was a reaction against positivism and behaviorism in human sciences in general and Bloomfieldian linguistics in particular. Behaviorism in America in the period between 1930 and the end of the 1950s studied human behavior including language in terms of habits, stimuli and responses. During this time the study of meaning in language was largely neglected. This is because Bloomfield and his followers, among which was Chomsky’s mentor Zeillig Harris, felt that meaning was inherently subjective, directly unobservable and thus beyond the scope of scientific investigation at least for the foreseeable future. In this context Chomsky’s professed mentalist approach to linguistic analysis was thought to be the revolution intending to bring ‘mind’ back into the human sciences after a long cold winter of objectivism. For Jerome Bruner, who was among the first lecturers on cognitive processes at Harvard University and a co-founder of the first Center for Cognitive Research there, as well as for other participants in the cognitive revolution of the 50s and 60s, Chomsky’s mentalist approach to language brought hope that meaning would become the central concept of psychology-not stimuli and responses, not overtly observable behavior, not biological drives and their transformation, but meaning. Did this really happen?

What really happened was that behaviorism was indeed dealt a mortal blow by Chomsky’s emerging transformational grammar, which claimed that behind the observable surface linguistic structures there are unobservable deep structures which are essentially innate, universal and it is only natural to claim that they have a mental

character. During the next 20 years both psychologists and linguists would be testing the hypothesis about the existence of such structures as well as the rules for the generation and interpretation of the surface structures, i.e. syntax. Thus, one of the most pervasive and influential approaches to the critical question of how language and the mind are connected was really pioneered by Noam Chomsky. It brought linguistic research in the center of the emerging cognitive science in the 50s and 60s but at the beginning of the 21c. it also raised the question whether the direction in which the entire discipline has been steered since then was the right one.

Although linguistic data were in the center of research in the cognitive sciences (e.g., parsing, memorizing words in utterances, etc.) the whole paradigm of linguistic research has shifted. The research focus shifted from meaning to information and from the construction of meaning to the processing of information. Mind as a computer became the dominant metaphor and computability became the necessary feature of a good theoretical model. Chomsky's professed mentalist approach, which was expected to involve meaning i.e. semantics, turned out to be formal systems approach, in which the principal assumption is that the rules of syntax are independent of semantics. Language, in this view, is independent of the rest of cognition. The set of rules formulated under the idea that a grammar is a formal system are essentially algorithmic, i.e. mathematical. In such a system, no use is made of meaning. Chomsky's generative grammar assumes that the language faculty is independent of external cognitive capabilities. This definition of grammar blocks any attempt to disconfirm it by referring to facts about cognition in general. A language defined as a set of strings of uninterpreted symbols generated by production rules is like a computer language.

### **1.1.2. Objectivist Semantics**

It should be briefly mentioned that the formal syntax theories which developed in the 20<sup>th</sup> c. were complemented by formal semantic theories (or model-theoretical semantics); the logical rules, which generate the grammatically well-formed sentences of a language need the correct lexical items to be inserted appropriately in the grammatical structures. The individual words are thus analyzed as sets of "objective" semantic features which correspond to the properties of entities and categories in either the existing world or in other possible worlds. For example, the meaning of *car* will contain the following semantic features: [+inanimate, +movable, +concrete, etc.]. Thus all linguistic expressions and the concepts they express are symbols, meaningless in themselves, which get their meaning via direct unmediated correspondence with things and categories in the real world (or possible worlds). Such an analysis is grounded in the classical theory of categorization, which goes back to Aristotle and defines a category on the basis of necessary and sufficient properties. Such an account, however, does not consider the nature of human thinking and communicating or the nature of human experience. Chomsky's revolution was cognitive in the sense that it did bring mind into the human sciences but not as the seat of meaning, which underlies human cognition, communication, and culture, but as the seat of information processing and computation.

The cognitive linguistic approach is a natural reaction to Chomsky's formalist approach as outlined above. For the cognitive linguist the human language is not like a computer language and linguistic meaning and information is not one and the same thing. Although cognitive linguistics is a reaction against formal syntactic theories and formal semantics it is far from being 'revolutionary'. As it has been pointed out above, East

European home-grown semantic theories (cf. Prague school notion of center and periphery, Russian ‘Meaning vs. Text’) are remarkably close to cognitive linguistics. In addition, cognitive linguistics gives us the chance to reconnect the threads of various linguistic areas of inquiry and build on previous research in semantics, pragmatics and grammar. As a theory it has no single source, or central authority but a set of core concepts and goals, which are shared by cognitive linguists, psychologists, philosophers, literary critics, etc. These concepts have emerged from empirical observations rather than as the product of a superimposed theory. They are anchored in the experiential aspects and such cognitive principles underlying language as figure and ground, i.e. prominence, gestalt perception, mental imagery, motor movements, attention allocation, etc.

## **2. Cognitive Linguistics: Core Concepts**

### **2.1. Cognitive Linguistics and Linguistic Cognition**

The main assumption of cognitive linguistics is that linguistic cognition is an inextricable phenomenon of overall human cognition and as such we expect patterns and structures of cognition observed by psychologists, neurobiologists and the like to be reflected in language. Conversely, linguistic structures, by virtue of their relative concreteness, provide generalizations that may reflect basic human cognitive abilities and processes which still remain unobservable directly. Linguistic structures are not only relatively concrete and directly observable; what is even more important is that they are also examples of categorization that is abstract, automatic and entirely unconscious. Linguistic categories are among the kinds of abstract categories that are, perhaps, the most important ones for the study of the mind as their conceptual structure cannot be viewed as merely a mirror of nature. As Lakoff (1987), one of the major influences in cognitive linguistics, points out human language is an important source of evidence for the nature of cognitive categories. Conversely, the views on cognitive categorization such as Rosch’s prototype theory (cf. section 3.2. below) should affect the theories of categorization used in linguistics. If languages use the kind of categories used by the mind in general, then linguistic theory should be bound up with cognitive issues in general. This assumption is also outlined by one other founder of the cognitive linguistics school of thought, Ronald Langacker (1987:12-13), against the background of the generative grammarian approach to the issue:

“Language is an integral part of human cognition. An account of linguistic structure should, therefore, articulate with what is known about cognitive processing in general, regardless of whether one posits a special language “module” (Fodor 1983), or an innate *faculte de langage*. If such a faculty exists, it is nevertheless embedded in the general psychological matrix, for it represents the evolution and fixation of structures having a less specialized origin. Even if the blueprints of language are wired genetically into the human organism, their elaboration into a fully specialized linguistic system during language acquisition, and their implementation in everyday language use, are clearly dependent on experiential factors and inextricably bound up with psychological phenomena that are not specifically linguistic in character. Thus we have no valid reason to anticipate a sharp dichotomy between linguistic ability and other aspects of cognitive processing. Instead of grasping at any apparent rationale for asserting the uniqueness and insularity of language, we should try more seriously to integrate the findings of linguistics and cognitive psychology.”

## 2.2. Weaving the web of meaning

For cognitive linguistics meaning is the central issue, the meaning of words as well as the meaning of sentences; in other words, the meaning of any linguistic expression no matter how small or big it is. The centrality of meaning comes from the assumption that all linguistic phenomena are interwoven with each other as well as with other cognitive phenomena to allow us to make sense of, to understand our experience and to be able to communicate this understanding. Unlike objectivist semantics, cognitive semantics adopts an experientialist account in which meaningful thought and reason make use of symbolic structures which are meaningful in themselves as they reflect not only the external objective reality but also the way this reality is perceived and conceived by the human beings (cf. section 3). What exactly does that entail? The idea of symbolization takes us back to the founder of linguistics as a science, Ferdinand de Saussure and the classical diagram representing the linguistic sign or expression as an association of a phonological representation i.e. a sound-image (form) with a semantic representation i.e. concept (meaning):



Figure 1. Representation of the linguistic sign

The Saussurian principle of the arbitrariness of the linguistic sign, however, is taken to be important but not all pervasive by cognitive linguistics. More often than not linguistic signs and expressions are meaningful in themselves, they are nonarbitrary to the extent that they are motivated and analyzable. To use Langacker's example (1987: 12), given that *staple* means what it does and *-er* in English means what it does, it is no surprise that *stapler* is the form used for a stapling device.

The experiential approach in cognitive linguistics is exemplified by the preferred methods of investigation. Experiments and personal interviews are preferred to theoretical frameworks and introspection. They have shown that in the definition of common words such as '*car*' already discussed above in objectivist semantic terms, people will include such attributes as 'fast', 'comfortable', 'luxury', etc. These, in fact, are associations and impressions which are part of the common experience of people in a particular culture. Such an experiential view of words seems to be superior to the

objective account of meaning because it provides a much richer and more natural description of their meaning (Ungerer and Schmid 1996). Linguistic expressions are also meaningful in themselves because they store our shared experience of the world in yet another way. Take figurative language, especially metaphor. Lakoff and Johnson (1980) have convincingly argued that we live by certain metaphors such as ARGUMENT IS WAR, TIME IS MONEY, COMMUNICATION IS SENDING, etc., which are conceptual phenomena structuring our way of thinking to which we have access primarily if not only through the language we use (cf. section 4).

The assumption of cognitive linguistics that language is symbolic in nature goes beyond the conception of only the lexicon as symbolic (Langacker 1987). It argues that morphological and syntactic structures themselves are inherently symbolic, above and beyond the symbolic relations embodied in the lexical items they employ. One of the most significant hypotheses of cognitive linguistics is that most if not all grammatical categories have meaning and the meaning contributed by these categories is conceptual. Such an approach presupposes that the semantic structure of language is seen as a subset of overall conceptual structure. As Langacker (1987: 98) points out, there should not be any difference in kind between conceptual structure and semantic structure; there is only a terminological distinction, the former being general the latter specifically linguistic. Cognitive Grammar, the theoretical framework developed by Langacker and closely paralleling Lakoff's version of cognitive semantics, considers all linguistic structures concepts, from phonemes to the meanings of words and larger expressions. Concepts are also referred to as units by Langacker, a unit being "a structure that a speaker has mastered quite thoroughly, to the point where he can employ it in largely automatic fashion, without having to focus his attention specifically on its internal parts or arrangement. Despite its internal complexity, a unit constitutes for the speaker a 'prepackaged' assembly; precisely because he has no need to reflect on how to put it together, he can manipulate it with ease as a unitary entity. It is effectively simple, since it does not demand the constructive effort required for the creation of novel structures" (1987: 57, emphasis in the original).

Cognitive Grammar like cognitive linguistics in general is an integrative theory; it rejects the concept of 'modules' in language and accommodates language within cognition. "Grammatical structures do not constitute an autonomous formal system or level of representation: they are claimed instead to be inherently symbolic, providing for the structuring and conventional symbolization of conceptual content. Lexicon, morphology, and syntax form a continuum of symbolic units, divided only arbitrarily into separate components; it is ultimately as pointless to analyze grammatical units without reference to their semantic value as to write a dictionary which omits the meanings of its lexical items." (Langacker 1990: 1). A semantic analysis within Cognitive Grammar is equated with conceptual analysis plus an analysis of how conceptual content is shaped and construed. There are many different ways to construe a given body of content, and each construal represents a distinct meaning, that is, an expression imposes a particular image on the content it evokes. Thus for Cognitive Grammar meaning is conceptualization and, since the human beings conceptualize relative to various cognitive domains, Cognitive Grammar claims that meaning is encyclopedic, a full account of the meaning of linguistic expressions would mean a full account of cognition (Langacker 1987). "The only viable conception of linguistic semantics is one that avoids false dichotomies and is consequently encyclopedic in nature" (Langacker 1987: 154).

From the symbolic nature of language follows that meaning is central in cognitive linguistics. It underwrites the existence of all linguistic units and phenomena, none of which is semantically empty. All the various phenomena of language from the supra-segmental phonology through morphology and syntax to discourse pragmatics work together to express meaning. The web metaphor of language structure stands out in the following quote from Janda (2000): “Cognitive linguistics is an exploration of the fabric of meaning, woven thread by thread from bodily experience and embroidered by metaphor.”

### **3. The Embodiment of Meaning**

#### **3.1. The psychological and conceptual view of word meanings**

Where does meaning come from? It is not simply just there in the linguistic forms such as words, morphemes and sentences. If meaning is conceptualization, what makes concepts meaningful? As it has already been pointed out above, the experiential account of meaning proposes that meaning is embodied, i.e. it is grounded in our physical and social experiences. The shape and construction of our bodies and the way we interact with the environment form the experiential basis for understanding the structure of our concepts. Lakoff (1987:265) claims that “conceptual structure is meaningful because it is *embodied*, that is, it arises from, and is tied to, our preconceptual bodily experience. In short, conceptual structure exists and is understood because preconceptual structures exist and are understood. Conceptual structure takes its form in part from the nature of preconceptual structures.”

According to Johnson (1987), Lakoff (1987) and Lakoff and Johnson (1999) there are at least two kinds of structures in our preconceptual bodily experiences:

- a) Basic level structure: basic-level categories result from our gestalt perception, capacity for bodily movement, and ability to form rich mental images (cf. section 3.3.)
- b) Image schemas, which are simple and basic structures recurring in our everyday bodily experiences in the process of interacting with the world. Examples of such schemas are: CONTAINERS, SOURCE-PATH-GOAL, FORCES, BALANCE, NEAR-FAR, COUNT-MASS, etc., and various locational and orientational relations such as UP-DOWN, FRONT-BACK, IN-OUT, PART-WHOLE, CENTER-PERIPHERY, etc. In sections 3.2. and 3.3. the readers will find a more detailed description of basic-level categories and other levels of categorization within the prototype theory and an elaboration on the image schemas mentioned above. In fact, as Croft and Cruse (2004: 63) point out image schemas are construals of experience, though they can be characterized as frames or domains as well. Such construals represent the most basic level of constituting experience and giving it structure or a Gestalt).

### **3. 2. The Prototype Model of Categorization**

#### **3.2.1. The Classical Model of Categorization**

In semantics, categorization plays a crucial role because it is reflected in the use of words and language in general. A lexical item is comprehended as corresponding to a

category. Defining the lexical item therefore means defining the category. However, more recently the dynamic construal approach has emerged in which concepts are viewed as being created at the moment of use (Croft 2004) but this approach will be discussed in section 4.

The classical model, also called the Aristotelian model, is based on Aristotle's distinction between essential and accidental features or attributes of objects and natural phenomena. Things are in the same category only if they share a set of necessary and sufficient conditions. These conditions can be represented as a list of distinctive, discrete features which are either present (+) or absent (-). For example, the necessary and sufficient conditions for a creature to belong to the BIRD category are 'two wings', 'two legs', 'a beak', 'feathers' and 'lay eggs'. As there is one-to-one correspondence between categories and the concepts for these categories, the structure of the concepts mirror the structure of the real world. Categories of the mind i.e. concepts fit the categories of the world i.e. natural kinds. The linguistic version is the doctrine of natural kind terms: the world consists of natural kinds of things and natural languages contain names called natural kind terms that fit those natural kinds. But a large number of the categories we deal with during our lives are not categories of things objectively existing in the world. They are abstract entities among which there are categories of actions, emotions, spatial relationships, social relationships, etc. A theory of categorization must account for all kinds of categories, both concrete and abstract. The classical theory has been taken for granted in the Western scholarly tradition for over 2 000 years. It is not based on empirical study; it is a philosophical position based on a priori speculations.

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### **Bibliography**

Croft W.A. (2001). *Radical Construction Grammar*, 416 pp. Oxford: Oxford University Press [This presents a critique of syntactic theory and suggests that syntactic structure is almost entirely language specific]

Croft, W. and Cruse, D.A. (2004) *Cognitive Linguistics*, Cambridge: Cambridge University Press [a survey of the field of cognitive linguistics focusing on conceptual structures, cognitive processing, lexical semantics, syntactic representation, and construction grammar]

Lakoff, G. (1987). *Women, fire and dangerous things. What categories reveal about the mind*. Chicago: University of Chicago Press. [This book questions the classical views of reason, categorization, and language and provides evidence for the alternative experientialist view of mind]

Lakoff, G. and Mark Johnson (1980). *Metaphors we live by*. Chicago: Chicago University Press.[This analyzes metaphor as a conceptual phenomenon and show its pervasiveness in language and thought]

Lakoff, G. and Johnson, M. (1999),pp 624. *Philosophy in the Flesh*. Basic Books, New York. [This book re-examines the concepts of the mind, time, causation, morality and the self and reveals the metaphorical structure underlying thought]

Langacker, R. (1987). pp 516 *Foundation of cognitive grammar*. Volume I. Stanford, California:

Stanford University Press [This is the most comprehensive cognitive conception developed so far based on the extension and refinement of figure and ground cognitive processing]

Langacker, R. (1991) pp 589 *Foundation of cognitive grammar*. Volume II. Stanford, California: Stanford University Press. [This volume suggests how to use the theoretical tools presented in v.I applying them to representative grammatical phenomena]

Rosch, Eleanor. 1978. Principles of categorization. In Eleanor Rosch and Barbara B. Lloyd, ed. *Cognition and categorization*. Hillsdale/N.J., N.Y.: Laurence Erlbaum, 27-48.[a concise description of Rosch's findings in the field of categorization]

Talmy, L.,1985. Lexicalization Patterns: Semantic structure in lexical forms. In: Timothy Shopen, ed., *Language typology and syntactic description*, 3, Cambridge: CUP, 36-149[This study explores the basic cognitive patterns that underlie a wide variety of real world situations such as motion events]

Talmy, L.,2000. *Toward a cognitive semantics; vol.I: concept structuring systems*. Cambridge, Mass.: MIT Press.[This offers a new version of Talmy's previous classifications of construal operations]

Ungerer, F. and Schmid, H. 1996 *An Introduction to Cognitive Linguistics*, Pearson Education Limited [The book is a comprehensive introduction to the central concepts of cognitive linguistics including categorization as a mental process and how it is reflected in words and their meanings; the role of metaphor for the understanding abstract concepts; clause patterns and general cognitive principles]

Wierzbicka A. 1995. *Semantics: Primes and Universals*, 500 pp. Oxford: Oxford University Press[This outlines a semantic theory of universal concepts based on human cognition, communication, and culture]

Wittgenstein, Ludwig. 1958. *Philosophical Investigations*. Blackwell, Oxford.[This deals with language meaning and use, and the philosophical problems coming from the confusion of these two aspects of language]

### **Biographical Sketch**

**Snezha Tsoneva-Mathewson** has an MA in English Language and Literature from Sofias University, Bulgaria, an MA in Applied Linguistics from SIU-C, USA and is finishing her PhD dissertation at St. Andrews University, Scotland. She has studied a number of linguistic phenomena from a cognitive linguistic perspective-the periphrastic future in Old Slavic, property predicates in modern Russian and Bulgarian, verbs expressing possession in modern Bulgarian.