

# POLYSEMY IN COGNITIVE LINGUISTICS

Dalieva Madina

PhD, Associate Professor UzSWLU

## Abstract:

This article introduces the field of polysemy and synonymy studies from a Cognitive Linguistic perspective. Firstly, the discussion explains and defines the object of research, showing that the study of semantic relations, traditionally restricted to the description of lexical semantics, needs to be extended to include all formal structures, including morpho-syntax. Secondly, given the theoretical assumptions of Cognitive Linguistics, it is argued that quantitative corpus-driven methods are essential for the description of semantic structures.

**Keywords:** Cognitive Linguistics, corpus linguistics, polysemy, prototype semantics, quantification, radial network analysis.

## Introduction

The probably most widely accepted definition of polysemy is as the form of ambiguity where 2+ related senses are associated with the same word; consider the meanings of glass in I emptied the glass ('container') and I drank a glass ('contents of the container'). Ever since this notion was proposed by Bréal (1897), it has been puzzling researchers from many disciplines: linguists, lexicographers, psycholinguists, psychologists, computer scientists, etc. In the componential Classical Theory of Meaning (Katz and Fodor 1963; Katz 1967), meanings of words were defined on the basis of necessary and sufficient conditions (or features/markers) without reference to contexts, therefore, a particular entity was either a full member of the category defined by a word or not, and (iii) the similarity of meanings of different words, or senses of the same word, could be quantified by counting the number of features/markers shared by meanings/senses. Thus, a word was ambiguous if it had more than one definition using such features (where no distinction between different kinds of ambiguity – homonymy and polysemy – was made).

Cognitive linguistics (CL), or cognitive semantics, drew on research in philosophy, anthropology, and cognitive psychology and adopted a perspective in which polysemy became an omnipresent property associated with lexical items but also morphemes, grammatical constructions, and whole grammatical classes.

The treatment of polysemy in CL involves (i) viewing meaning/sense as categorization, recognizing the importance of context for meaning/senses and that linguistic and encyclopedic knowledge are hard to keep separate, and (iii) incorporating prototype theory into linguistics. As for (i), meaning/sense is viewed as categorization such that, e.g., learning/recognizing that a sparrow is a bird amounts to establishing birds as a category of which sparrows are a member. That is, lexical items are the linguistically coded subset of all conceptual, mentally represented categories.



Meanings of lexical items are difficult to pin down without considering both their context and encyclopedic real-world knowledge, an assumption from Fillmore's (1975, 1982) Frame Semantics. An early example involves what Cruse (1995: 44) calls cooperative readings: The presence of zeugma in (1a) appears to indicate that dissertation is polysemous with at least two senses ('intellectual content' vs. 'physical object'), but the slight change to (1b) results in an absence of zeugma, which does not support a similar polysemy (following Geeraerts 1993 and, ultimately, Norrick 1981):

- a. Judy's dissertation is thought-provoking and yellowed with age
- b. Judy's dissertation is still thought-provoking although yellowed with age

While polysemy analyses became increasingly popular, scholars also began to discuss their shortcomings. One discussion was triggered by Sandra and Rice (1995); see also Rice (1996): – how is the prototype defined? For over, Brugman/Lakoff postulated 'above-across' is the prototype, Tyler and Evans (2001) postulated 'above' to be central, Deane (2005) "characterized the preposition in terms of a trajectory entity which intervenes between observer and the landmark" (Taylor 2012: 236), etc.;

- how are different senses distinguished and is the fine level of resolution often adopted really warranted? Do (5) and (6) need to be distinguished as different senses or can they be conflated into one? (Are there even different word senses?)
- what motivates the different representational formats and what is the ontological status of the proposed networks? Cognitive linguists often argued their analyses were compatible with, or stood for, some sort of cognitive reality, but how much do such linguistic analyses warrant psychological/psycholinguistic claims?

Another discussion involved how much (cognitive) linguists can really say about mental representation (especially on the basis of something as volatile as introspection; cf. Nisbett and Wilson 1977). First, Croft (1998) argued that the typical introspective linguistic evidence – e.g., grammatical/semantic idiosyncrasies – can exclude more general models of mental representation (i.e., more schematic/monosemic models), but that, conversely, grammatical/semantic generality does not automatically support more general models – for that, additional experimental/observational evidence is required (e.g., sentence-sorting, sentence-similarity judgments, or [lack of] similar distributional behavior in corpora).

Sandra (1998) limited the purview of linguistic studies even more, arguing that "linguists have a very minor role to play when issues of mental representations are at stake

[...] At most they can restrict the range of potential options" Sandra also cautions CL to avoid the polysemy fallacy to automatically postulate very fine-grained sense distinctions (when more schematic sub-analyses might be sufficient) and to consider such analyses a rendering of the language user's mental representation of the linguistic data. This view, which appears to exhibit a slightly old-fashioned and non-interdisciplinary division of linguists vs. non-linguists/psycholinguists as well as a lack of recognition of, say, Tuggy's introduction of multiple levels of schematization, was addressed by Tuggy. Tuggy points out shortcomings in Sandra's characterization of Croft's positions and the polysemy fallacy, but also argues that introspective data are "extremely important evidence" because "when such intuitions line up



impressively, they acquire a degree of objectivity”. This argument actually reinforces Sandra’s point since proper experimentation is a way to get intuitions by multiple speakers to “line up”. Also, Tuggy proposes additional polysemy diagnostics such as direct intuitions about sense relations, perceptions of puns, evidence from speech errors, and “holes in the pattern”, as when particular usages that should go with a particular form do not. Given the huge amount of research on polysemy and ambiguity, this overview was selective and much interesting work could not be discussed. While psycholinguistic work has yielded some robust findings, many of the central questions of CL regarding senses’ distinctness, relatedness, representation, and their right level of granularity, remain largely unanswered. Across all three areas – CL, corpus linguistics, and psycholinguistics – a consensus is emerging to assume a multidimensional semantic space in which usages or senses are located such that their spatial proximity reflects distributional and/or semantic similarity; cf., e.g., Gries (2010) and Taylor (2012) for cognitive/corpus linguistics and, Rodd et al. (2004) for psycholinguistics. Thus, while integral to early CL, the notion of distinct senses appears more of a descriptive device rather than a claim about psycho- linguistic reality. This conception does justice to the fact that the same word/sense – i.e., region of semantic space – can be accessed or traversed at different levels of resolution and from different angles/trajectories.

One implicit assumption of the endeavor of language translations is that many or most words in different languages have the same or similar designated referents. For example, to translate the English word bird into another language, it is necessary for the targeted language to have a word that refers to birds. A note should be made regarding the scope of this statement.

Finally, CL has approached the polysemy of content and function words in the same way, but the two types of words seem to be lateralized differently (Bradley and Garrett 1983); in fact, Damasio and colleagues suggest that nouns vs. verbs and even different categories of concrete objects are represented in different neural regions, which has implications for polysemous words (cf. Lupker 2007: 169). Only by combining multiple approaches/tools will CL be able to develop polysemy analyses that are compatible with the cognitive commitment to make one’s account of human language accord with what is generally known about the mind and brain from disciplines other than linguistics.

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