

Cognitive Grammar and Lexicography

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1.1 Introduction

Cognitive Linguistics is a growing interdisciplinary enterprise that seeks to ground theoretical models of linguistics with cognitive psychology. Because of this emphasis linguistic theorizing is highly intuitive with a large scope of investigation from phonology through to anthropology and computation (Palmer 1996). Cognitive Grammar is one theoretical model among many that fit under the umbrella of cognitive linguistics. CG is a growing model that is expanding its descriptive scope into non-Indo-European languages.¹

In cognitive linguistic circles the topic of polysemy is one of controversy. Critics claim cognitive linguists view everything as polysemy. With a convincing application of prototype theory to lexicography (Tuggy 1993; Geeraerts 1991, 1997; Geeraerts, Grondelaers and Bakema 1994; Taylor 1989) polysemy has found substantial theoretical support for its existence.

In general lexicographical practice, theory is not often used to support lexicographic characteristics (Geeraerts 1987:1). This paper shows how theory, CG specifically, can be used to support lexicographic decisions. The paper first considers Langacker's analysis of simple and episodic nominalization and verbalization in English (Langacker 1991:24-5). It then shows how the semantic intuitions of these two processes established from the theory can be characterized in lexicographical practice by standard conventions of sense and range as practiced by Newell (1995).

1.2 Claims and notions in Cognitive Grammar

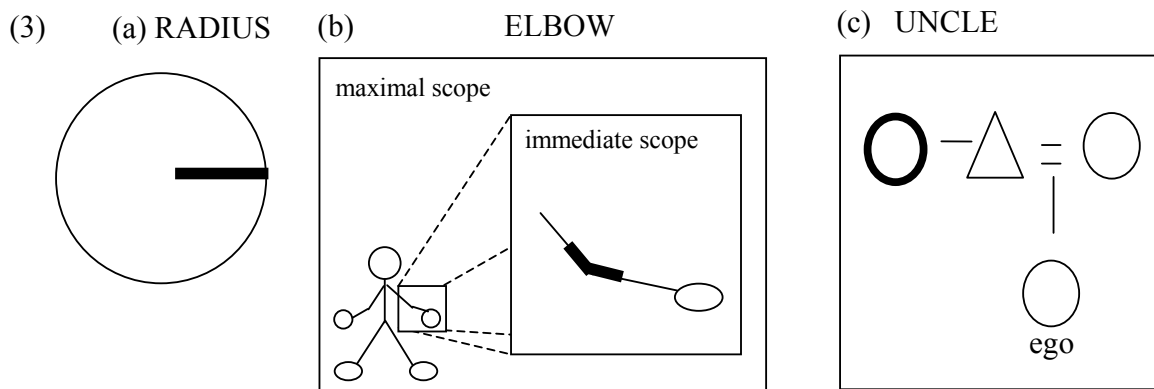
CG claims that grammar and meaning are indissociable. Grammar reduces to the structuring and symbolization of conceptual content and thus has no autonomous existence at all (Langacker 2000: 1). The semiological function of language reduces to **units**, conceptual (all caps), phonological (lower case) and symbolic (conceptual units in relationship to phonological units).² CG further claims that lexicon and grammar form a continuum of symbolic structures, lexical structures being more specific and grammatical structures more schematic in conceptual detail. This is diagrammed in (1) below.

¹ See Inglis (2003: 223-246) for a recent example of Cognitive Grammar applied to Thai both lexically and grammatically. Also this entire volume is dedicated to applying Cognitive Grammar to an expanding range of grammatical phenomena (Casad and Palmer 2003).

² These fundamental claims and notions are detailed in the classic volumes on Cognitive Grammar (Langacker 1987a, 1991).

fourth figure in (2), *shout-er*. Because *shout* is a verb it is a potential target for the construction VERB- NR schema. The unusual or novel word *shouter* could be used in a sentence and understood in a given context. For example, people could be watching a sporting event with one fan in particular screaming louder than all the rest. One fan could say to another something like, “Who is the *shouter*?” This is a very peculiar and strange use of a nominalized form of the verb *shout*, but it does make sense for the given context. This would be considered a non-entrenched use of a unit and in (2) is marked this way by the use of an oval instead of a rectangle for the unit. There is the potential for a word such as *shouter* to become entrenched and conventional through repeated uses and a spread throughout a speech community. Languages are always undergoing this sort of “creative” expansion. CG accounts for this kind of expansion by examples like the one in (2).

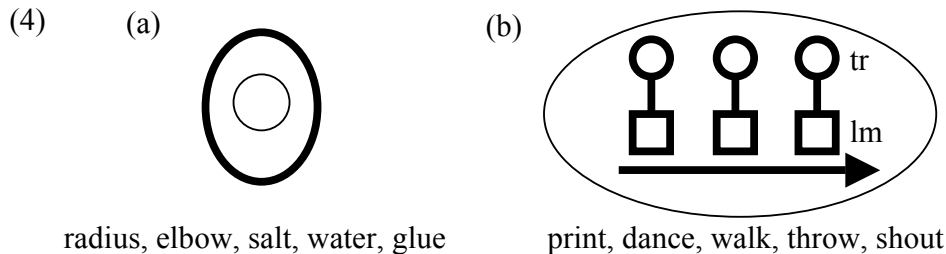
Within any conceptualization there is a *figure/ground* organization, such that one element has focal *attention* within a contextual background. With CG each concept has a **profile** (the salient focal point of attention) and a **base**, which forms the background. The focal point of the meaning of a word using the notion of profile is shown in (3).



In each of these nouns the meaning resides with the profile (the marks in bold) because it is the focus of a conception that designates. In (3a), if the actual radius is not in some way figured there is no way to know whether one is talking about a circle or radius or both. Likewise, if the circle is not part of the background all one is left with is a line. It takes the base and profile together to understand the concept. In (3b), the elbow, being a body part, is somehow related to the body as a whole but is also related more specifically to the immediate connecting parts, the hand and arm. These more complex concepts require delimited scopes (maximal and immediate) for their full understanding. Finally, in (3c) the noun concept is construed in relation to other concepts like MOTHER, FATHER, AUNT, etc. It is the figure in the conception that designates the meaning of the target word.

Categorization is organized in **domains** of experience (basic and complex). Nouns are manifested primarily in SPACE and verbs in TIME. In (4a) time is not pictured whereas in (4b) time is pictured with an arrow. A noun profiles a thing or object, while verbs along with adjectives, adverbs, and prepositions belong to a set of **relational**

predications. A noun profiles a thing but a verb profiles the interconnections or the relationships between two or more things through time.⁵



Because verbs are relational concepts they are viewed with a primary figure, **trajector (tr)**, that functions in relation to a secondary figure, **landmark (lm)**. This can be considered a secondary type of prominence within the general cognitive figure/ground alignment. A profile works to designate a meaning and the tr/lm alignment works to designate a primary and secondary relationship between two figures.

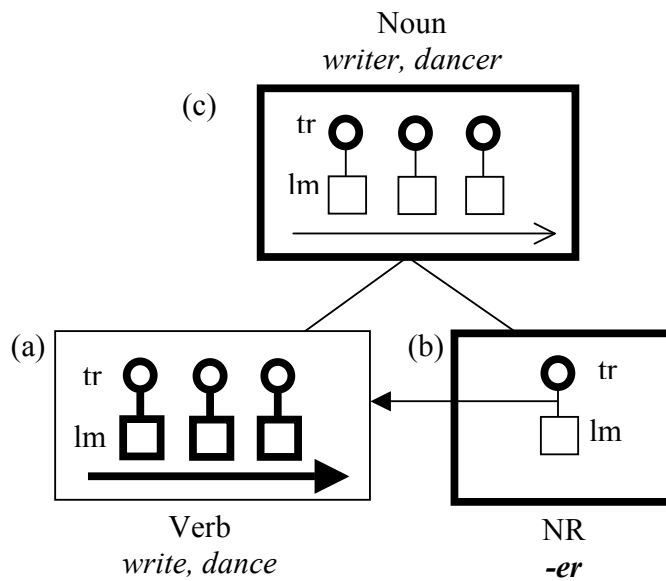
A verb, furthermore, is described as a series of stative relations distributed continuously through conceived time (arrow in (4b)). A conceptualizer conceiving an action scans the component states in serial fashion. This is called **sequential scanning**. A verbal conception cannot be conceived without this cognitive process of scanning through time. **Summary scanning** is conceived of as a single one-shot picture or gestalt. It is important to note that sequential and summary scanning are actually general cognitive capacities that are here being exploited for language use.

2.1 Nominalization and verbalization in English

In CG a symbolically complex expression (**construction**) is characterized as an assembly of symbolic structures. **Component** structures (5a and b) integrate to provide a **composite** structure (5c). The composite is not merely the sum of the components but forms a gestalt. An inventory of conventional units, therefore, includes individual lexemes and chunks of analyzable expressions that often maintain their own unit status.

⁵ For a thorough understanding of nouns and verbs in Cognitive Grammar see Langacker (1987b).

(5)



Component structures integrate via semantic overlap within their individual conceptions. In (5a) is pictured one of the two components as the verb (*write, dance*, etc.). The second component is the nominalizer shown as (5b). Even though it is grammatical it still bears conceptual content no matter how abstract. Here it is characterized as a noun conception whose profile is the trajector in a relationship to a backgrounded landmark. It is exactly because the profile is limited to one aspect of the relationship rather than the entire relationship, as in (5a), that makes the nominalizer an abstract noun conception.

The components (5a and b) have overlapping semantic parts, namely the trajector and landmark in relation to each other. This overlap allows for composition to take place. The composite in (5c) combines all semantic content from both component parts then profiles and backgrounds certain aspects of the overall composition. Here the composite structure inherited the profile from the nominalizer (5b). The result is a noun rather than a verb conception.

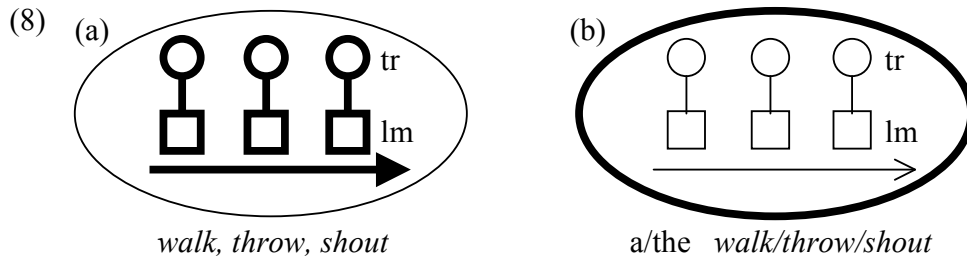
Episodic nominalization is a more complex type of nominalization and it is thus conceptualized differently than (5) above. Consider the data in (6).

(6)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(a) Perfective verbs:
 He will walk to the market.
 He will throw the ball to first base.
 He will shout the signal to the players.</p> | <p>(b) Episodic nominalizations:
 He will go for a walk to the market.
 He will make a throw to first base.
 He will give a shout to the players.</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

To analyze this kind of nominalization requires the concepts of sequential and summary scanning. In an episodic nominalization a process conception is no longer viewed as a process but rather as a single episode or whole. What is changing in the conception is that the profiled interconnections of a process are being conceived as a whole region rather than being scanned sequentially through time. In other words, the

sequential scanning that occurs when conceptualizing a process changes to a summary scanning when conceptualizing a noun. This is pictured below in (8).



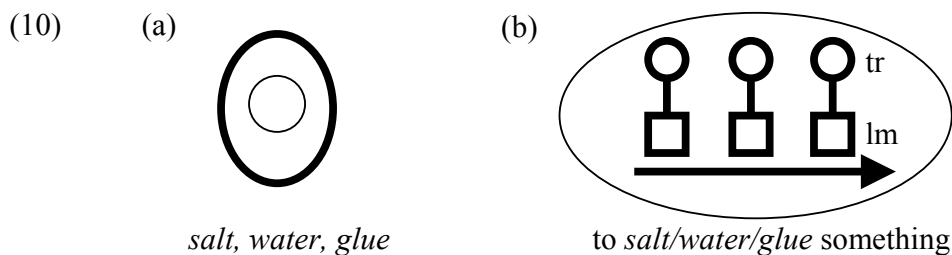
In (8a) each individual state contributes to the process because they are scanned sequentially through time. In (8b), however, the same process is now construed in an alternative way, by viewing it as a gestalt or whole. The states are no longer individually scanned one at a time through the TIME domain but rather are scanned in summary as a single picture of a complex noun that was based on a verbal picture.

Some English nouns can undergo a verbalization process as seen in (9).

- | | | |
|-----|--------------|----------------------------------------------|
| (9) | a) Noun: | b) Verbalization: |
| | salt | He will salt the food. |
| | water | She will water the flowers. |
| | glue | He will glue the two pieces together. |

Nouns exist as conceptually independent. That is, a person can conceive of a noun independent of any action taking place with that noun. A *boy* is a boy alone and independent of any other concept associated with it. Verbs, on the other hand, are conceptually dependent in that they cannot be conceived in isolation without at least some other thing associated with it. The idea to *kick* cannot be pictured without some animate being doing the kicking. The idea to *explode* cannot be pictured without some object undergoing an explosion. The data in (9a) can be conceptualized without any other association necessary for its comprehension. The data in (9b) requires additional semantic content in order to be conceptualized. Something has to be salted, watered, or glued.

Langacker accounts for this verbalization by adding some semantic content, however abstract, to allow the verbalization to stand. To verbalize the nouns in (9) a landmark or trajector is needed. This is shown in (10).



The nouns in (10a) are conceived independently of any action. The same nouns that undergo the verbalization process can only be conceptualized if additional semantic content is added. The verbal depiction in (10b) is that of consecutive states of a relationship scanned sequentially through time.

2.2 Theory applied to lexicography

Many volumes on lexicography have been written. The discussion in this paper follows Newell (1995). He states, “a sense is a hypothesis that one meaning has derived from a previous meaning (i.e. the meanings are semantically related but have a distinct central meaning).

In Ifugao of the Philippines the word *tabayan* refers to ‘a drop spindle, used for spinning fibers’ (It is made of a dowel shaft onto which a wooden disk is fitted). This lexical item is also used to refer to ‘a roof –apex disk and post of a traditional house’.

At first glance, it seems that these two references are homonyms. But if we say that these two references are actually ‘senses’ of the same lexical form (instead of homonyms) we are hypothesizing that these two references are actually semantically related. The polysemy would look like (11).

(11)

tabayan 1 n. A drop spindle, used for spinning fibers.
2 n. A roof –apex disk and post of a traditional house.

(12)

ha’’ad 1 v. munha’’ad Someone **will position** an object **erect**.
2 v. huma’’ad Someone **will divine** something **by an egg-balancing ritual**.

In (12) a similar situation holds but there is affixation that marks the difference in sense. Despite the affixation this lexeme establishes two senses. Presumably sense 2 was derived on the basis of ‘placing an egg on end’ (sense 1), an important action performed as part of the ritual. Diachronic analysis bears out this semantic relationship.

Notice for polysemy or ‘sense discrimination’, that each sense has a separate core (distinctive) meaning (in bold) and a semantic relationship exists between these two senses based on shape or position. In establishing the polysemy analysis in (11) and (12) we are making a hypothesis that one sense has been derived from the other, instead of both of these senses actually being completely separate words with a coincidental identical form (homonym).

There are two processes that help determine multiple senses. These are **diachrony** (the sense discrimination occurs over time) and **semantic derivation** (some semantic relationship either real or perceived).

Newell establishes lexicographical range with the following example.

(13)

tabaung *n.* **A damp or flooded depression;** commonly used as a water hole for washing hands, bathing, washing dishes or clothing; a carabao or pig wallow.

This example shows that a word has one central meaning but the context in which that meaning is used has a wide variation. This variation does not warrant a separate sense because there is no change in the central content of the word. In this case the central sense is indicated and the various contexts are listed under that sense as a range of meaning.

Range of meaning involves the form of the lexeme (it may have variant forms) as identified as a single form. The semantic components of meaning of the lexeme remain constant in all environments. The extensional meaning of the lexeme may vary, depending on the linguistic and extra-linguistic context.

Lexicography is the physical representation of semantic analysis. In many cases it is built on native language speaker intuition. Lexicographical decisions that find support from theoretical models make for better and more consistent entries. Following Langacker's analysis of English nominalization a decision can be made as to sense discrimination. This is suggested in (14).

(14)

write *v.* **to compose a text** with letters and words. writer *n.* a person **who composes a text** with letters and words.

dance *v.* **to moves in rhythm** usually in time to music. dancer *n.*; a person **who moves in rhythm** for fun or as a profession.

The simple nominalization is analyzed in (5) as a noun, in this case as a primary figure in a process that is scanned in a summary fashion. Between the verb conception and the derived noun conception there is no semantic content added. This theoretically motivates only one central meaning with potentially other variations analyzed as range of meaning. For range of meaning I am not suggesting that in an actual dictionary entry the noun entry needs to be specified redundantly as shown in (14). I have done this here only to emphasize the fact that the noun has the same core meaning as the verb. In an actual entry the noun could be stated as **a person who dances/composes**. The important point is that there is no core meaning change between the verb and noun conception.

Similarly, episodic nominalization is analyzed in (8) as a change in construal only. The construal is changed from a process that is scanned sequentially through time to a noun that is scanned in a summary fashion. There is no conceptual content added in this derivation. The lexicographic entry for (6) should look something like (15), ignoring the actual redundancy within the range, which is here depicted for emphasis only.

(15)

a)

walk *v.* **to move from one location to another** by using one's legs; *n.* the act of **moving from one location to another** by using one's legs.

b)

throw *v.* **to cause an object to move from one location to another** by using one's arms; *n.* the act of **causing an object to move from one location to another** by using one's arms.

c)

shout *v.* **to yell something** out or to another person or animal; *n.* the act of **yelling something** out or to another person or animal.

Notice in (15) that the central meaning from that of the verb to that of the noun is centrally the same. The only difference is one of a process to that of an action conceived as a noun. Because there is no conceptual content added from the theoretical model the lexicographic depiction is one of range rather than sense.

The verbalization process in (9) as analyzed in (10) differs from that of both simple and episodic nominalization processes. In (10) when the noun changes to a verb something fundamentally conceptual in content needs to be added. The addition of semantic content to the base of the verbalization indicates a change in core meaning. Because of this augmentation a lexicographical description as in (16) is warranted.

(16) Lexicographical Sense

a)

salt **1 n. a chemical** that lends a tang or piquancy to food

2 v. to sprinkle or season with salt

(16)

b)

water **1 n. a liquid chemical** that makes up rivers, lakes and oceans

2 v. to sprinkle or supply with water

c)

glue **1 n. a sticky substance** used for adhering things together

2 v. to make things adhere together by using glue

Each of the words in (16) is analyzed as having two senses. They each have two central meanings that are related. The first sense is a noun and highlights a chemical or substance as central. The second sense is the verbal sense and has some sort of action as central with the original noun as secondary substance.

3.1 Conclusion

Cognitive Grammar, being a theoretical model that takes semantics and meaning as central to grammar, is shown to have potential as a model for supporting lexicographical decisions. This paper attempts to develop some basic principles of lexicography for the specific model of CG.

In the case of nominalization and verbalization in English this model suggests that in derivative processes the resulting conceptual content in the base that does not change from the original base should be lexicographically described as a single sense with range in meaning. Whereas, the resulting picture that adds conceptual content to the original conception should be lexicographically described as two separate senses.

If certain lexicographic decisions, such as derivative processes, are based on a model as suggested in this paper it will substantiate the decisions made rather than positing them ad hoc. It will further force a consistency throughout the dictionary compilation process for similar derivations.

This paper is also an invitation to lexicographers to explore CG as a foundational tool for their arduous and ongoing task.

Finally, as a practitioner of CG, this paper finds intuitive support for the kinds of cognitive claims this model makes. The resulting analyses and descriptions arising from CG, at least tentatively, find support in years and years of traditionally lexicographic intuition. When it comes to theoretical models of grammar this intuition is a corroboration not taken lightly.

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