Lecture 10 Methods and Generalizations in Linguistics

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In contrast to sharply autonomous views of language structure, cognitive linguistics has resurrected an older tradition. In that tradition, language is in the service of constructing and communicating meaning, and it is for the linguist and cognitive scientist a window into the mind. Seeing through that window, however, is not obvious. Deep features of our thinking, cognitive processes, and social communication need to be brought in, correlated, and associated with their linguistic manifestations. We are achieving a genuine science of meaning construction and its dynamics by intensively studying and modeling the cognition that lies behind language and goes far beyond it. In this last lecture, I will use the results obtained in the study of conceptual mappings to illustrate the powerful methods developed within cognitive linguistics, guided by the general scientific principles of economy, operational uniformity, and cognitive generalization.

1. Backstage Cognition

• Language is only the tip of a spectacular cognitive iceberg, and when we engage in any language activity, be it mundane or artistically creative, we draw unconsciously on vast cognitive resources, call up innumerable models and frames, set up multiple connections, coordinate large arrays of information, and engage in creative mappings, transfers, and elaborations.

• Backstage cognition includes viewpoints and reference points, figure-ground/profilebase/landmark-trajector organization, metaphorical, analogical, and other mappings, idealized models, framing, construal, mental spaces, counterpart connections, roles, prototypes, metonymy, polysemy, conceptual blending, fictive motion, force dynamics.

• All these aspects of backstage cognition receive justification on non-linguistic grounds. Some have been studied in psychology (e.g. prototypes, figure-ground, analogy), others in artificial intelligence and/or sociology (frames, roles, cultural models), literature and philosophy (metaphor). Metonymy, mental spaces, force dynamics, conceptual blending, initially studied by linguists have been shown to apply to cognition generally. The notion of viewpoint and reference point is presumably even more general, given the nature of our visual systems and orientation.

2. Generalization

In the work on conceptual blending, a strong generalization is the discovery that the same principles apply to framing, metaphor, action and design, mathematics, and grammatical constructions. This is not an internal generalization about language, it is an external one relating linguistic phenomena to non-linguistic ones.

3. Guiding principles

ECONOMY

• Any language form in context has the potential to trigger massive cognitive constructions, including analogical mappings, mental space connections, reference point organization, blends, and simulation of complex scenes. Very sparse grammar guides us along the same rich mental paths, by prompting us to perform complex cognitive operations.

• Eliza effect for meaning

OPERATIONAL UNIFORMITY

• Figure-ground and viewpoint organization pervades the sentence (Talmy (1978), Langacker (19987/1991)), the Tense system (Cutrer (1994)), Narrative structure (Sanders and Redeker (1996)), in signed and spoken languages, and of course many aspects of non-linguistic cognition.

• Metaphor builds up meaning all the way from the most basic levels to the most sophisticated and creative ones (Lakoff and Turner (1989), Grady (1997)).

• Frames, schemas and prototypes account for word level and sentence level syntactic/semantic properties in cognitive and construction grammar (Lakoff (1987), Fillmore (1985), Goldberg (1997), Langacker (1987/91)), and of course they guide thought and action more generally (Bateson (19972), Goffman (1974)).

• Conceptual blending and analogy play a key role in syntax and morphology (Mandelblit (1997)), in word and sentence level semantics (Sweetser (1996)), and at higher levels of reasoning and rhetoric (Robert (1998), Coulson (1997), Turner (1996))

• Force dynamics and fictive motion (Talmy (1985, 1998) operate at all levels (single words, entire systems, like the modals, and general framing).

COGNITIVE GENERALIZATION

• Linguistics is no longer a self-contained account of the internal properties of languages; it is in its own right a powerful means of revealing and explaining general aspects of human cognition.

4. Conceptual mappings

MENTAL SPACES

Access Principle: If two elements a and b are linked by a connector F (b = F(a)), then element b can be identified by naming, describing, or pointing to, its counterpart a.

- (1) Max thinks the girl with blue eyes has green eyes.
- (2) Last year, the girl with blue eyes had green eyes.
- (3) In the picture, the girl with blue eyes has green eyes.

(4) That newspaper you're reading was just sold to Hearst for \$50Billion. It will reorganize itself, and will soon be located on Wall Street.

- (5) Norman Mailer loves to read himself.
- (6) Plato is on the top shelf, next to Homer.
- (7) I'm the quiche, she's the ham sandwich.
- (8) The mushroom omelet left without paying his bill.

CONCEPTUAL INTEGRATION

Mirror network with two inputs

As we went to press, Rich Wilson and Bill Biewenga were barely maintaining a 4.5 day lead over the ghost of the clipper *Northern Light*, whose record run from San Francisco to Boston they're trying to beat. In 1853, the clipper made the passage in 76 days, 8 hours. — "Great America II," *Latitude 38*, volume 190, April 1993, page 100.





Mirror network with many inputs



World Record in the Mile

Double-scope counterfactual

(9) If they were still alive they would also plead for mercy for their grandson.



Double-scope metaphor

(10) He is digging his own financial grave.



Simplex network:



(11) Paul is the father of Sally.

CAUSAL COMPRESSIONS

- (12) Martina is three points away from the airport.
- (13) Rituals: Baby and the Stairs, Buffalo Hunt
- (14) Young man and Skull
- (15) "He's snatching the food out of the mouths of starving children"
- (16) plane cockpit: blue hockey stick



Direct connection between vertical speed knob and arrow

(17) "meaning in the words"

EMERGENT STRUCTURE



- (18) Skiing waiter, desktop, math
- (19) Time and timepieces





FIGURE 1 Complex number (r,θ)

Compression

(20) Emergent grammatical constructions



5. Cognitively modern humans



The critical stage of double-scope blending and the equipotentiality of language

• characteristic of human beings as compared with other species and indispensable across art, religion, reasoning, science, and the other singular mental feats that are characteristic of human beings.

6. Fallacies

Fallacy 1: Different surface products result from different cognitive operations

Fallacy 2: If it's new, it's going to cost more

Fallacy 3: A wide-ranging cognitive operation purports to explain "everything

7. NP_x is NP_y of NP_z (XYZ constructions)

(21) Ann is the boss of the daughter of Max.



Megablend

(22) Prayer is the echo of the darkness of the soul.



Megablend