

# Intro to Cognitive Linguistics

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## A mathematician, a physicist, an engineer, and a linguist walk into a bar...

They're trying to decide if all odd numbers are prime.

The *mathematician* says, “one’s prime, 3’s prime, 5’s prime, 7’s prime, 9’s not prime, so no.”

The *physicist* says, “one’s prime, 3’s prime, 5’s prime, 7’s prime, 9’s not prime, but maybe that’s experimental error.”

The *engineer* says, “one’s prime, 3’s prime, 5’s prime, 7’s prime, 9’s prime...”

The *linguist* says, “one’s prime, 3’s prime, 5’s prime, 7’s prime. Aha! We have a universal generalization. Nine doesn’t seem to be prime, but it MUST be prime at some underlying level of representation!”

2 Joke told by Arnold Zwicky during his Presidential Address at the Linguistic Society of America, 1992. From Goldberg, Adele. *Constructions at Work : The Nature of Generalization in Language*. Oxford, GBR: Oxford University Press, 2006. p.19

# Construction

Form  $\leftrightarrow$  Meaning

Thanks to Rick Grush

## The same:

- Constructions have been the basis of major advances in study of grammar since the time of the Stoics (Goldberg 2006:ch2)

## The different:

- New theoretical approach allows observations about constructions to be stated directly, providing a framework that allows both broad generalizations and more limited patterns to be analyzed and accounted for fully

# Related fields / scholars

## Related scholars:

- Fillmore (“let alone” construction, 1988)
- Tomasello
- Laura Michaelis
- Jackendoff

## Related fields:

- Usage based linguistics
- Frame semantics

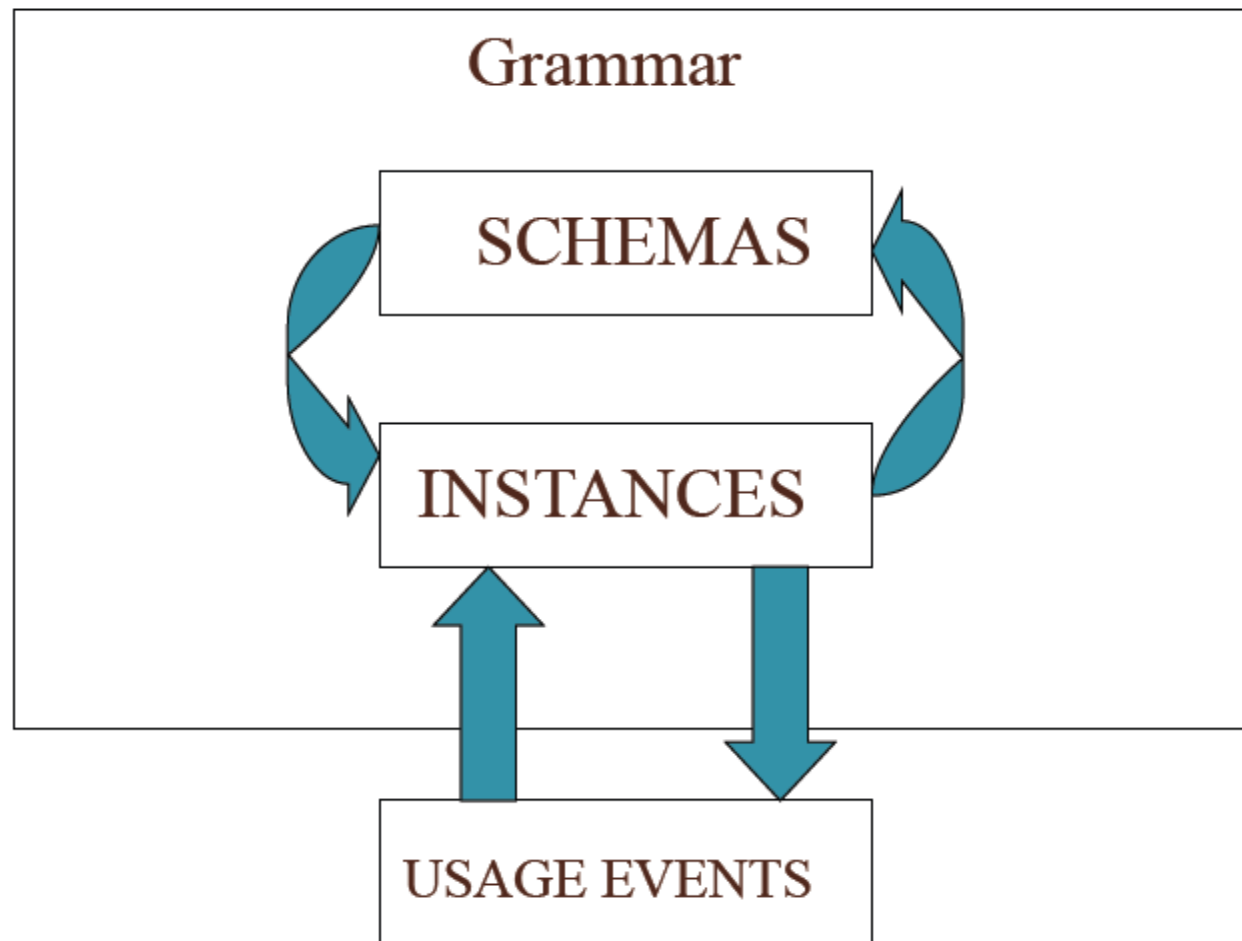
# Usage Based Linguistics

- Usage Based linguistics (Bybee, Langacker)
  - language as complex, adaptive system: frequency effects, graded phenomena are expected
  - usage is tied to particular contexts: explains genre-differences and context-influence

# UBL

## Patterns in corpora as a somewhat distorted mirror (via generalization)

Cognitive entrenchment (the degree of weighting of links in individual linguistic knowledge networks) results from, and also shapes, external language (instances of use). It is **repetition** in use and its resulting and shaping cognitive **entrenchment** that lead to the generalized patterns found in corpora (productions of speakers sharing similar networks formed from similar output patterns).



Thanks to Suzanne Kemmer, LSA 2011, Usage Based Grammar



Why would usage be a  
complementary approach for  
construction grammar?

# Characteristics/strengths of UBL

## Corpus Linguistics

- Corpora can provide type frequency and token frequency for constructions. Frequency information is used in explanations of language acquisition and language change

## Grammar Building:

- Construction grammar, cognitive grammar, Bybee's usage models...all provide maximalist representations that accommodate gradient phenomena

- On to Construction Approaches...

# Grammar Fightclub – Round 1

## **CG and GG would agree:**

- it's essential to consider language as a cognitive system
- any theory of language must account for the creation of novel utterances
- theory must also account for language learning

# Grammar Fightclub– Round 2

## CG and GG disagree:

- the best way to study (the nature of) language is by studying formal structures independent of their semantic or discourse functions
- grammar is characterized by ever increasing layers of abstractness to account for data (is there evidence to support these layers?)

# Grammar Fightclub– Round 2

## CG and GG disagree:

- meaning comes from mental dictionary of words (lexicon)
- semi-regular and unusual patterns are largely ignored as periphery to the main data; theory does not need to fully account for them
- complexity of core language cannot be learned inductively; humans are hard-wired with principles specific to language (universal grammar)

# What are Constructions:

Construction Approach	Generative Approach
<ul style="list-style-type: none"><li>• <b>construction = any linguistic pattern where some aspect of its form or function is not strictly predictable from component parts or other recognized constructions</b></li><li>• <b>All levels of description are understood to involve pairings of form with semantic or discourse function ( incl. morphemes, words, idioms, phrasal patterns)</b></li></ul>	<ul style="list-style-type: none"><li>• No constructions</li><li>• de-emphasizes semantics of particular words, morphemes or unusual phrases (asserts these are ‘idioms’, or information is stored in the lexicon)</li></ul>

# What are Constructions:

	Construction Approach	Generative Approach
Example: 'The more you think about it the less you understand'	<ul style="list-style-type: none"> <li>Posits a construction that specifies form and semantic function of both parts: 'the + comparative phrase' (neither noun phrase nor clause)</li> </ul>	<ul style="list-style-type: none"> <li>Problem: syntax is unpredictable and unexplainable</li> <li>D+NP = DP, what about conjunction of the two phrases?</li> </ul>
Example: 'He sneezed the napkin off the table'	<ul style="list-style-type: none"> <li>direct link between surface form and aspects of the interpretation: sneeze is normally one-argument: He sneezed. Here – interpretation by virtue of caused-motion construction.</li> </ul>	<ul style="list-style-type: none"> <li>Need to posit that 'sneeze' has a different sense stored in the lexicon where it selects for 3-arguments.</li> </ul>



# Functions of Constructions

	Construction Approach	Generative Approach
	<ul style="list-style-type: none"><li>• emphasis is placed on subtle aspects of the way we conceive of events and states of affairs</li><li>• different surface forms associated with different semantic or discourse functions</li></ul>	
<b>Example (see p221): ditransitive (verb like give: I gave John a book) implication of transfer</b>	<ul style="list-style-type: none"><li>• implication of transfer by virtue of ditransitive construction</li></ul>	<ul style="list-style-type: none"><li>• implication of transfer by virtue of lexical items involved</li></ul>

### Construction Approach

- ‘what you see is what you get’: no underlying levels of syntax or any phonologically empty elements
- No derivations. A construct can involve other constructs, but one construct is not derived from another

### Generative Approach

- Derivations, and lots of underlying levels (projections), null/empty elements etc. to account for the data

# Learning Constructions

Construction Approach	Generative Approach
<ul style="list-style-type: none"><li>• Constructions are learned on the basis of the input and general cognitive mechanisms (they are constructed), and are expected to vary crosslinguistically.</li><li>• whatever means we use to learn periphery patterns can be extended to account for core phenomena</li><li>• core and periphery phenomena both learned based on input</li></ul>	<ul style="list-style-type: none"><li>• learners are hard-wired with principles specific to a language faculty (UG)</li><li>• periphery constructions (semi-idiosyncratic) need not be the focus of theorists, no relation to core phenomena</li><li>• only periphery phenomena learned by input</li></ul>

# Cross-linguistic Generalizations

Construction Approach	Generative Approach
<ul style="list-style-type: none"><li>explained by appeal to general cognitive constraints and the functions of the constructions involved</li></ul>	<ul style="list-style-type: none"><li>explained through UG, principles and parameters</li></ul>

# Language-specific generalizations across constructions

What is typology of possible constructions?

What constrains possible constructions?

Construction Approach	Generative Approach
<ul style="list-style-type: none"><li>captured via grammar-external explanations (universal pressures, processing and learning constraints), i.e., networks that are posited to capture non-linguistic knowledge as well</li></ul>	<ul style="list-style-type: none"><li>some generativists now agree that constraints on language that used to require stipulating innateness can be explained by general cognitive mechanisms (Hauser, Chomsky and Fitch in Science)</li><li>less and less is done by the UG (in minimalism only recursion)</li></ul>