Construction Grammar

2017 LINGUISTIC INSTITUTE
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LECTURE 1: CONSTRUCTIONIST VIEWS OF LANGUAGE
What must we know to interpret a sentence?

Example:  
*John told me that house has already been sold.*

As a first approximation:

- Lexical information about the phonological form, grammatical category, and meaning of each word and morpheme
- Inflectional forms of words and what structural contexts they occur in
- Systematic grammatical patterns and their associated principles of semantic composition
- Discourse context and principles for interpreting meaning in context
- Real-world knowledge

- All except discourse context and real-world knowledge are included as part of *linguistic knowledge*
Generative Approaches to Grammar

Starting with Chomsky’s early work (1957, 1965), all generative approaches to grammar share the following basic assumptions:

- Linguistic knowledge is mentally represented
- Linguistic knowledge (‘competence’) underlies language use (‘performance’)
- Linguistic knowledge is ‘generative’ in allowing users to produce an infinite variety of novel utterances
- Linguistic knowledge underlies users’ intuitions about the well-formedness of utterances
- Certain commonalities exist among all human languages
- Humans have a unique ability to learn and use languages
Mainstream Generative Grammar

Minimalism (Chomsky 1995, Lasnik 2003) makes the following additional assumptions:

- Syntactic operations are distinct from lexical information.
- Syntactic operations are maximally general. Idiosyncrasies are largely confined to lexical entries and ‘performance’ effects.
- Syntactic operations are derivational. Lexical items are ‘merged’ sequentially into partial syntactic structures in a bottom-up fashion, resulting in binary-branching structures.
- Syntax is an autonomous system which interfaces with phonology and semantics at the output of each ‘phase’ of a derivation.
- The generative capacity of language comes from the syntax alone. Phonology and semantics are interpretive.

Mainstream Generative Grammar

• Semantic roles are represented uniformly in syntax.
• Semantic roles such as Agent and Theme are uniformly assigned in their canonical position.
• Deviations from the canonical ordering of semantic roles involve movement (e.g. passive sentences, wh-questions).
• Semantic roles that are implicit but not directly expressed involve null constituents (e.g. subject-drop with “pro”, control with “PRO”)

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Mainstream Generative Grammar

Some additional assumptions:

• Language learning depends in part on an innate Universal Grammar
• Syntactic differences among languages occur at a superficial level (strong vs. weak features, covert vs. overt movement)
• Syntactic theory should be concerned with ‘core’ syntactic phenomena rather than lexical idiosyncrasies or peculiarities of usage
• Acceptability judgments are the most reliable data source for revealing the nature of competence
• Bottom-up syntactic derivations bear only a an indirect relationship to real time comprehension and production
Level-mapping Approaches

Level-mapping approaches include the Parallel Architecture, Automodular Grammar, Lexical-Functional Grammar, and Role and Reference Grammar.

- Phonology, syntax, and semantics are independent generative components of grammar, each of which consists of its own formation rules and units of structure.
- The components are related to each other via lexical entries, constructions, and general linking rules.
- Syntax consists of bits of structure stored in long-term memory. Sentences are formed not by bottom-up merger but by unification of lexical items and structures with compatible features.
- Lexical items and structures are accessed and assembled during real time comprehension and production.

Level-mapping Approaches

• Simpler Syntax: semantic roles are *not* represented uniformly in syntax.
  • Semantic roles such as Agent and Theme are mapped directly to their surface syntactic position
  • There is no need for syntactic movement
  • Semantic information does not have to be linked to any syntactic constituent
  • There is no need for null constituents in syntax
  • Constituent structures are simple, while semantics and pragmatics account for many distributional facts

Constructionist Approaches


- Very similar to level-mapping approaches but dispense with the independent generative components
- The entirety of linguistic knowledge consists of conventional pairings of form with meaning called ‘constructions’
- Constructions include morphemes, words, idioms, partially lexically filled expressions, and abstract phrasal patterns
- Linking rules of level-mapping approaches are replaced with abstract constructions
- Sentences are formed not by bottom-up merger but by unification of constructions with compatible features
- The generative capacity of language simultaneously involves composition in syntax, semantics, and phonology

Diagram from: English Language and Linguistics online: http://www.ello.uni-osnabrueck.de/field.php/CognitiveApproaches/GoldbergsConstructionGrammar
Constructionist Approaches

What is a construction? To paraphrase Goldberg (1995): a form-meaning pairing which is not completely predictable from its parts or from other existing constructions.

- Bound morpheme: plural -s
- Simple word: cat
- Compound word: cattail (meaning: type of wetland plant)
- Verb-particle construction: bring [something] up
- Phrasal idiom: keep tabs on [someone / something] (meaning: “monitor”)
- Comparative correlative: The more you practice, the better you play. (meaning: increase/decrease in X linked to increase/decrease in Y)
- Sound + motion: The old car clanked down the highway. (meaning: move along a path while clanking)
- Passive: The car was hit by a tree. (discourse function: make Theme argument topical)
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Constructionist Approaches

Some additional assumptions:

- Syntactic theory should be concerned with ‘core’ and ‘periphery’ at the same time
- Constructions fall along a continuum of specificity from highly idiosyncratic to highly general
- Generalizations across constructions of the same language are captured in terms of inheritance networks
- Constructions are learned on the basis of input and general cognitive abilities
- Linguistic knowledge includes knowledge of *usage* through a lifetime of experience

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Constructionist Approaches

Some additional assumptions:

• For a fuller picture of linguistic knowledge, multiple data sources should be consulted: corpus data, judgment tasks, comprehension tasks, production tasks

• Constructions vary a great deal cross-linguistically

• Cross-linguistic similarities are the result of general cognitive abilities and similar semantic/pragmatic functions of constructions

• Constructions are accessed and assembled during real time comprehension and production

Diagram from: English Language and Linguistics online: http://www.ello.uni-osnabrueck.de/field.php/CognitiveApproaches/GoldbergsConstructionGrammar
Valence augmentation: verbs of sound emission (cough, clank, rattle, buzz) normally do not denote motion, but they do when combined with a path expression.

- A patient wheezed and coughed.

_A patient at the Samsung Medical Center became a “superspreader” of Middle East respiratory syndrome after a misdiagnosis, leaving him to wheeze and cough around the hospital._ (NY Times 6/17/15)

- If we assume that the meaning of motion+path derives from a Directed Motion construction, there is no need for valence augmentation of the verb itself.
- Goldberg (1995): Construction meaning is reconciled with verb meaning. To be compatible, lexical meaning of verb must identify a subevent (in this case sound emission) within the event structure, but need not specify all the same arguments as the construction.

Why constructions? Some initial observations

Syntactically regular patterns with idiosyncratic meaning: Pseudo-imperative

Imperative sentences normally express a command or request.

- Watch the road. / Watch them go.

Pseudo-imperative evokes a humorous interpretation in which the speaker contradicts their own prediction and exposes the foolishness of tempting fate by making such a prediction.

The weather is starting to cool (at least for now—\textit{watch it be like 90 degrees tomorrow.} smh) and the only thing about that that excites me is the layering that comes with it.

- If we assume that the humorous meaning derives from a Pseudo-imperative construction, rather than from pragmatic principles alone, this can explain the highly conventional and idiosyncratic nature of the special meaning.

Why constructions? Some initial observations

Syntactically somewhat regular patterns with idiosyncratic meaning: Binominal NP

Many nouns can express one of their complements in the form of an of-PP:

- a piece of pie, a cup of sugar, a writer of fiction, a celebration of two birthdays, a reminder of the past

Binominal NPs take a similar form (Det1-N1-of-a-N2), but the first noun is not a complement-taking head, but instead a modifier of the second noun

- that bastard of a mic stand, a giant of a man, a skull cracker of a headache, a hell of a day (Kim and Sells 2015)

A constructional analysis derives the special meaning and some special syntactic restrictions from a Binominal NP construction. (Kim and Sells 2015)

Why constructions? Some initial observations

Syntactically irregular patterns with idiosyncratic meaning:
The X-er the Y-er (Comparative Correlative)

Meaning: increase/decrease in X a condition of increase/decrease in Y (first clause semantically subordinate)
• Paraphrase: As you do your work more carefully, it will get easier.

Irregular syntax:
• the + AP What is the category of the?
• [the + AP] participates in long-distance dependency with gap, but comp position can still be filled by that
• What is the category of [the + AP + finite clause]?
• Two-part structure shows mixture of subordinate and non-subordinate properties (Culicover & Jackendoff 1999)

Constructional analysis: regular bits of syntax are inherited from other constructions, while irregular syntax and idiosyncratic meaning are directly specified

Questions we will address in this course

• How do constructionist approaches capture morphological, syntactic, semantic, and pragmatic information associated with idioms, verb-argument structure, information structure, and mixed categories?
  • Why Simpler Syntax?
  • Why constructions?
  • What sources of data can best inform our analyses?

• How do constructionist approaches capture similarities and differences among related constructions of the same language?
  • What is an inheritance network?
  • In what ways are constructions linked to each other within the network (polysemy, subpart, instance, etc.)?
  • To what extent should we recognize relationships of ‘homophony’ (same form, different meaning) and ‘synonymy’ (same meaning, different form) for phrasal constructions?
Questions we will address in this course

• How are cross-linguistic generalizations captured in constructionist approaches?
  • The role of semantic and pragmatic functions (parts of speech, argument realization)
  • The role of constraints on language comprehension and production (head ordering, adjacency, filler-gap dependencies)

• In what ways do data from child language acquisition and adult language processing support and extend constructionist approaches?
  • Evidence from comprehension and production for argument structure constructions having a meaning independent of lexical items
  • Effects on processing of frequency and semantic prototypicality of verbs in relation to a particular construction
  • Relation between factors affecting usage of a construction and factors affecting online processing
# Constructionist Approaches

## Table 1. Examples of constructions, varying in size and complexity; form and function are specified if not readily transparent

<table>
<thead>
<tr>
<th>Construction</th>
<th>Form/Example</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morpheme</td>
<td>e.g. <em>anti-, pre-, -ing</em></td>
<td></td>
</tr>
<tr>
<td>Word</td>
<td>e.g. <em>Avocado, anaconda, and</em></td>
<td></td>
</tr>
<tr>
<td>Complex word</td>
<td>e.g. <em>Daredevil, shoo-in</em></td>
<td></td>
</tr>
<tr>
<td>Idiom (filled)</td>
<td>e.g. <em>Going great guns</em></td>
<td></td>
</tr>
<tr>
<td>Idiom (partially filled)</td>
<td>e.g. <em>Jog (someone’s) memory</em></td>
<td></td>
</tr>
<tr>
<td>Covariational-Conditional</td>
<td>Form: The Xer the Yer (e.g. <em>The more you think about it, the less you understand</em>)</td>
<td>Meaning: linked independent and dependent variables</td>
</tr>
<tr>
<td>construction [10]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ditransitive (double-object)</td>
<td>Form: Subj [V Obj1] Obj2 (e.g. <em>He gave her a Coke; He baked her a muffin</em>)</td>
<td>Meaning: transfer (intended or actual)</td>
</tr>
<tr>
<td>construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passive</td>
<td>Form: Subj aux VPpp (PPbv) (e.g. <em>The armadillo was hit by a car</em>)</td>
<td>Discourse function: to make undergoer topical and/or actor non-topical</td>
</tr>
</tbody>
</table>