JMORF — Morpho-Syntax

Sign-Based Construction Grammar

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Lecture 16
Location: SV 2.39

Overview

- Chapter 16 framework (same analyses, different underlying system)

- General wrap up

Construction Grammar (CxG)

- A family of grammars based on the idea that

  - Knowledge of a language comes from form and function pairings
  - **function** includes meaning, content, or intent (both semantics and pragmatics)
  - **form** includes phonology, syntax, orthography

- CxG grew out of generative semantics and cognitive linguistics, by researchers such as Charles Fillmore, Paul Kay and George Lakoff

- Instead of language as a grammar+lexicon, think of it as a structured network of families of constructions

Construction Grammars

- **Sign-based-Construction Grammar** (Berkeley Construction Grammar)
  unification-based framework (with computational implementation)

- **Goldbergian/Lakovian Construction Grammar**
  psychologically plausible

- **Radical Construction Grammar**
  syntactic categories, roles, and relations are not universal:
  they are not only language-specific, but also construction specific

- **Embodied Construction Grammar**
  relates constructions to embodiment and sensorimotor experience

- **Fluid Construction Grammar**
  learns grammars from the environment (with computational implementation)

Overview of Differences (SBCG vs HPSG)

- Multiple Inheritance

- Signs

- Grammar rules form a hierarchy — many more rules

- Every tree node has its own phonology

- Many principles become constraints on grammar rules

- The definition of well-formedness is simplified

  Look at Ian Sag's slides (from p25) if there is time after the presentations.

Wrap Up

HPSG
Head-driven Phrase Structure Grammar

- Describes a set of strings

- Associates semantic representations (and trees) with well-formed strings

    - Is stated in terms of declarative constraints
    ... which are order-independent
    - Locates most constraints 'in the lexicon'
    - Is stated in a precise fashion

Parts of our model

- Type hierarchy (lexical types, other types)

- Phrase structure rules

- Lexical rules

- Lexical entries

- Grammatical principles

- Initial symbol

Universals in our model

- SHAC

- Binding theory

- Head-complement/-specifier/-modifier

- Head Feature Principle

- Valence Principle

- Semantic Compositionality Principle

- ...

Design Goals of our Model

- Precise

- Robust

- Psychologically Plausible

- Computationally Tractable

Course overview

- Survey of some phenomena central to syntactic theory

- Introduction to the HPSG framework

- Process over product: How to build a grammar fragment

- Value of precise formulation (and of getting a computer to do the tedious part for you!)

Reflection

- What was the most surprising thing in this class?

- What do you think is most likely wrong?

- What do you think is the coolest result?

- What do you think you're most likely to remember?

- How do you think this course will influence your work as a (computational) linguist?

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