Item-based generalizations and argument structure acquisition: some relevant corpus findings

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A corpus study in the CxG framework
- Builds on insights in Construction Grammar
- Shows that some claims pertaining to the nature of constructions need to be nuanced
Some basic concepts

- **Construction Grammar**
  - Grammar = inventory of form-meaning pairs
  - No principled separation between syntax and lexicon

- **Focus: Argument realization in CxG**
  - Principles governing the morphosyntactic realization of the arguments of verbs
  - Argument Structure Constructions (Goldberg 1995, 2006)
    - Pairing of a schematic meaning with morphosyntactic specifications
    - Independent, not projected from the verbs
Some basic concepts

• Why would syntactic constructions convey meaning?
  – Straightforwardly accounts for coercion effects and non-compositionality
  – Predicts the argument structures of a verb
    • Central principle: semantic compatibility between the verb and the construction
    • The semantic relation between the two meanings is constrained
Some basic concepts

- Example: the ditransitive construction
  
  e.g. *Mary gave her sister a penny.*
  
  *Sam kicked Peter the ball.*
  
  *John sneezed the napkin off the table.*

  Semantics: Agent CAUSES Recipient TO RECEIVE Theme

  Syntax: $\text{Subject}_{\text{Agent}} \ V \text{Object1}_{\text{Recipient}} \text{Object2}_{\text{Theme}}$
Some basic concepts

- The origin of constructional meaning
  - ASCs = generalizations over instances, correlation of a syntactic form with a clausal meaning
  - Constructional meaning:
    - originates from lexical meaning
    - serves as the basis for generalizing the syntax to other verbs
  - Importance of “basic purpose verbs”, e.g. *go*, *give*, *put* (Goldberg et al. 2004)
    - Semantic prototype
    - Predictors of constructional meaning
    - A bias towards a semantic prototype facilitates ASC learning (in line with non-linguistic learning)
Some basic concepts

- **Example: the ditransitive construction**
  - Syntactic form: NP V NP NP
  - Occurs with verbs of transfer: *give, throw, send, ...*
  - The abstraction of 'X CAUSES Y TO RECEIVE Z' is straightforward

- **However: not always so straightforward**
  - cf. our case study
  - Raises new questions about abstraction processes as well as the unit status of linking constructions
Overview of the study

• Our corpus study
  – Focuses on lesser studied argument structures: prepositional constructions: \([\text{NP}_{\text{Sbj}} \ V \ prep \ NP]\)
  – Leaves the domain of the “typical” ASCs
  – Method
    • Based on the spoken part of ICE-GB (~600K words)
    • Retrieve all instances of the formal patterns
      – \([\text{NP}_{\text{Sbj}} \ V \ at \ NP]\)
      – \([\text{NP}_{\text{Sbj}} \ V \ with \ NP]\)
    • Check how the theory can account for the distribution
The *at*-construction

- We isolate “orientational” *at* (Adams 2001)
  - e.g. *all these Falange started firing at him* [s2a-050_160:2:A]
  - vs. temporal and locative,
    e.g. *I stay at Hilda’s* [s1a-053_167:1]
- cf. examples (1-8) on the handout
- Corresponds to the conative construction, evokes two possible schemas (Broccias 2001)
  - Allative schema (directed and attempted actions)
    *Sally kicked at the wall.*
  - Ablative schema (continuous actions, “bit-by-bit”)
    *He sipped at the tumbler of water.*
• Goldberg's (1995) approach to the conative
  – Generalized meaning = directed action

  ![Diagram]

  Sem:  DIRECT-ACTION-AT  <  agent  theme  >

  Syn:  V  Subj  Obl“at”

  instance, intended result [+motion, +contact]

  – How does this meaning relate to usage?
The *at*-construction

- **Visual perception = prototypical use**
  - Most frequent verb = *look* (~80%)
  - Contrasts with the treatment in the literature
    - Transitive alternation (Levin 1993)
      
      *I kicked the ball vs. I kicked at the ball*
    - Visual perception not always considered as conative, and even if so, not deemed central
      
      “*Look and aim* are not [+contact, +motion] verbs, and yet they bear an obvious similarity to the cases above.”
      
      (Goldberg 1995:64)
  - Still the best candidate for prototype
    - Most other verbs are not directed actions in other contexts
    - Experiential basis
The *at*-construction

- **Two differences with “typical” ASCs**
  - The relation between prototype and construction
    - Normally the most frequent verb predicts the constructional meaning
    - Not borne out here, e.g. compare with the Intransitive Motion construction:
      - *The truck rumbled into the tunnel* conveys the meaning of *go*
      - *I shot at the sherif* does not convey the (full) meaning of *look*
The *at*-construction

- The abstraction from lexical to constructional meaning
  - Less straightforward than for the usual examples
  - The use is primarily centered on looking
  - The meaning “directed action” is abstracted and associated with the construction
  - But the core element of meaning of *look* is not carried over to the construction
    - i.e. why does “eat at” not convey visual perception?
• [NP$_{\text{Sbj}}$ V with NP] (cf. handout)

  \begin{itemize}
    \item \textit{I actually agree with} Mary Jane [s1a-080_215:1]
    \item \textit{he's battling with} Doncaster and Schofield to hold on to it [s2a-012_140:7]
    \item \textit{no magic trick deals with} all the problems [s2b-028_106:2]
    \item \textit{I spoke with} the chairman of this Select Committee [s1b-054_10:1]
    \item \textit{as a child you started with} poetry [s1b-048_37:1]
  \end{itemize}

  – Is there an ASC?

  • In a CxG approach, argument linking relies on semantic compatibility with an ASC, but:
    – all these uses do not seem to have much in common
    – it is difficult to discern a constant meaning
The *with*-construction(s)

- Verb classification based on frame semantics
  - We used the FrameNet database
  - Verbs cluster in semantic frames
    - e.g. *Amalgamation* evoked by *combine, merge, mix*
      “These words refer to *Parts* merging to form a *Whole*. (The *Parts* may also be encoded as *Part_1* and *Part_2.*)”
  - Assumption: same semantic contribution of the construction for all verbs in a given frame
The *with*-construction(s)

- How to test whether there is a different interpretation for each frame?
  - Zeugma tests to detect sense boundaries
    - i.e. does coordination of verbs with distinct frames provoke a zeugma effect?
    - e.g. *She argued and fought with her older brother.*
      - *?She started and fought with her older brother.*
  - A number of frames emerge as compatible
    - cf. handout
    - Shows a possible candidate for an ASC (cf. new distribution)
    - We focus on those frames only
The *with*-construction(s)

- Further arguments in favor of a construction
  - Coercion effects:
    - Verbs of communication: semantic shift from communication to discussion (*talk to* vs. *talk with*)
    - Verbs of meeting become verbs of discussion, e.g. *I sat and visited with him for hours*
    - Marginally occurs with transitive verbs of social activities, e.g. *marry* (+ semantic change)
  - Productive pattern, open to novel verbs (ex. 23-26)
    - Verbs of communication: *text, IM, skype*
    - Verbs of fighting: *lightsaber*
The *with*-construction(s)

- Nevertheless different from “typical” ASCs
  - The distribution does not follow a consistent pattern of meaning, rather a complex network
  - A general meaning is hard to exactly define
    - Possibly: two participants of the same ontological type both involved in a common activity, either collaborative or confrontational
  - Coercion effects in many directions and specific to verb classes
  - A beast with many heads?
• These data do not neatly fit into the ASC model
  – Verbal diversity is problematic for determining
    • the exact nature of abstraction processes (the at-construction)
    • the semantic prototype of the category (the with-construction(s))

• Studying less tightly definable constructions raises interesting questions concerning
  – the principles of meaning abstraction
  – the unit status of these constructions