Cascades and Grammar

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1. Goldman’s act-trees

1.1 An act-trees
Goldman (1970: 34)

1.2 The nature of the multi-level analysis

- A Goldmanian act-trees does not present a multiplicity of acts, or events.
- It is a multi-layered description of one doing, but
  - it is simultaneously categorized at different levels, where
  - the layered categorization is cognitive reality, and
  - the levels are coherent and hierarchically ordered
- At the different levels of acting, the same agent is acting, but
  - instantiating different types of act,
  - causing different things,
  - engaged in different interactions,
  - responsible for different action

1.3 Alvin Goldman (1970): “Level-generation” of acts
An act A of a lower level level-generates an act A’ at a higher level:
S does A’ BY, or sometimes IN, doing A under conditions C*. [p. 20]

Examples
1.3 Alvin Goldman (1970): “Level-generation” of acts

Goldman (1970: 23, 26, 27,

<table>
<thead>
<tr>
<th>Type of generation</th>
<th>Generating level A</th>
<th>Generated level A'</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 causal</td>
<td>S does A</td>
<td>S causes E</td>
<td>under circumstances C*, Act A causes event E</td>
</tr>
<tr>
<td></td>
<td>S shoots the gun</td>
<td>S kills B</td>
<td></td>
</tr>
<tr>
<td>2 conventional</td>
<td>S says “Hi” to B</td>
<td>S greets B</td>
<td>circumstances C* and rule that A done in C counts as A' guarantees that A'</td>
</tr>
<tr>
<td>3 simple</td>
<td>S runs 100 m in 9.57 sec</td>
<td>S breaks the world record for 100 m</td>
<td>under circumstances C*, S doing A entails S doing A'</td>
</tr>
<tr>
<td>4 compound</td>
<td>S holds pen</td>
<td>S draws something on a surface with a pen</td>
<td>Acts A, A', ... jointly constitute A and are circumstances to each other</td>
</tr>
<tr>
<td></td>
<td>S presses pen on surface</td>
<td>S moves pen</td>
<td></td>
</tr>
</tbody>
</table>

2. Cascades

2.1 Definition

- A cascade is an act-tree that does not bifurcate upwards.

2.2 The upward \( \uparrow \) cascade relation: constitution

The upward relation is generalized level-generation: constitution\_under\_circumstances c-const. What acts a given act-token may be considered to level-generate, depends on the circumstances.

2.3 The downward \( \downarrow \) cascade relations IN and BY: substrate

The relation IN can be considered an attribute implementation, physical_bas, foundation; its inverse is counts\_as, amounts\_to, constitutes, means.

- S does A' in doing A.
- Doing A is doing A'.
- Doing A' consists in doing A.

[BNC] All through “The Graduate” Nichols thought he’d made a mistake in casting me.

The relation BY can be considered an attribute like means\_of (if A' is intended), cause; its inverse relation is effect.

- S does A' by doing A.
- Doing A has the effect of doing A'.
- A' is not A.

[BNC] reduce the number of new HIV infections by giving young people the facts about AIDS

3. Cascades and/in lexical verb frames

3.1 General constraints on lexical act-types

- Context-independence (necessary):
  - Act-type concepts as lexical verb meanings
  - will not provide for the incidental, conceptually unconnected
  - may provide for particular circumstances as presuppositions

- Focusing [Hypothesis]
  - Lexicalized act-type concepts are focused on one thread in an act-tree, i.e. on a cascade: no upwards bifurcation in a lexicalized verb meaning.
3.2 Basic and non-basic act-types

Examples of basic act-types (Goldman 1970: 18)
- extending one’s arm
- bending one’s knee
- opening one’s eyes
- puckering one’s lips

moving one’s finger
shrugging one’s shoulder
turning one’s head
wrinkling one’s nose

• An act-type is non-basic, i.e. higher-level
iff an exemplification of the act-type can be realized by different types of act.

For example: "x decline y" can be enacted in different ways,
by moving one’s head from side to side, by saying "No", in written form, etc.

• No A, no A’ relationship between a non-basic act-type A’
  "If S would not have done A, he would not have done A’" (Goldman 1970: 41)

• Therefore: every higher-level act (onto)logically requires a lower-level substrate act.

3.3 Basic and non-basic act verbs

100 most frequent English verbs with primary act-type meaning (according to BNC)

basic, non-basic.

say go make take come give look use tell put work leave show ask try call keep
hold bring help start write run set move play pay meet lead carry produce talk
offer suggest add buy send decide win describe agree build read reach spend
return draw create sell walk raise increase report watch explain claim support
cut reduce establish join achieve seek deal choose face rise kill drive discuss place
argue introduce pick wear present catch enter plan eat point arrive refer act relate
identify pull compare manage thank close announce note maintain publish express
avoid determine save visit encourage

⇒ Practically all verbs of action are higher-level,
and therefore contain a cascade within their frame.

3.4 The frame for ‘help’

The concept for ‘help’ does not specify the kind of act that constitutes the help for the recipient
(Engelberg 2005). Under circumstances, practically any kind of act may be of help to someone or not.

4. The internal cascade of the ‘write’ frame

4.1 The structure
4.2 Modification is level-sensitive

- Modifiers select a level of the cascade as the target of modification.
- Most modifiers are level-selective.
- Some modifiers are not selective. For example, for a verb of incremental production, like *write*, *slowly* and *quickly* may apply at any level.

4.3 Product specification is level-sensitive

- At different cascade levels, different ontological types of things are produced.
- Product specification selects the level where it saturates an argument of the verb.
- With a higher level all lower levels are existentially saturated appropriately.
- Most object specifications are level-selective.

4.4 Actor specification is level-sensitive

Goffman’s (1979) notion of “footing”

- Composition is not deterministic; there may be more than one level available for selection.
- The result of composition depends on level-selection within the verb cascade.
- The level selected is not determined by grammar, but primarily depends on the semantics of the modifier or complement specification.

```
Trump ...
... writes a letter to Merkel
```

```
Trump’s ghostwriter ...
... writes a letter to Merkel
```

```
Trump’s ghostwriter’s typist ...
... writes a letter to Merkel
```
4.5 Object cascades related to the action cascade of writing

- Objects and persons, too, are conceptualized in cascades:
  In our cognitive reality, persons and objects are not just physical entities, but figure simultaneously in different contexts, constituting different things at the same time.

- Cascade-levels often correspond to roles.

- Upward cascade relation: **c-constitution**
- Downward cascade relation: **substrate**

5. Semantic cascades and grammar

5.1 Austin’s speech act cascade

- Locutionary and illocutionary level are reflected in grammar.

5.2 Certain templates

Fleischhauer, Gamerschlag & Petersen (to appear)

*The motorbike howls around the corner*

Verb of sound emission used in a construction for directed locomotion.

- Path specification *around the corner* unifies with the generating ‘move’-node.
- Availability of lower-level act concept enables the construction.
5.3 Presidential affairs

A ‘president’ is conceived as an object cascade with the two levels ‘office’ (level of social institution) and ‘person’ (level of social individual) [cf. Anderson & Löbner (2017)]

The president visited Netanyahu.

Reading: Official visit by visitor in office to host in office.
- visit\textsubscript{official} requires visitor and host at the office level
- The actor node unifies with the office-level node of the ‘president’ frame.
- The office-level action needs to be implemented by a staging action at the person-level

\textit{office level} \hspace{1cm} \textit{president} \hspace{1cm} \textit{person level}

- \textit{actor} node
- \textit{host} node
- \textit{IMPL} node
- \textit{INCUMBENT} node
- \textit{stage} node

\textbf{6. Cascades in syntax}

6.1 Constituent structure

\begin{itemize}
  \item Observation: constituent trees don’t bifurcate upwards
  \item Syntactic constituency can be considered cascade c-constituency:
    \begin{itemize}
      \item Mothers are constituted by their constituents
      \item Daughters are the lower-level substrates of what they constitute
      \item Constituency depends on circumstances / given context
    \end{itemize}
  \item Projection is level-generation
  \item Levels are well-established in grammatical theory.
  \item Levels are cognitive reality to the language user; they are (intuitively) discernible and learnt.
\end{itemize}
6.3 Model 1: compound level-generation

- All constituents of a higher-level unit jointly level-generated it.

(Van Valin, *Summary of RRG*, p. 4)

6.4 Cascades and the acquisition of grammar

- L1 learners start out with one-word full sentence utterances.
- The word projects immediately to SENTENCE level, with illocutionary force.
- Incorporation of more words necessitates intermediate levels.

References


Fleischhauer, Jens, Thomas Gamerschlag & Wiebke Petersen (to appear), A frame-analysis of the interplay of grammar and cognition in emission verbs. Düsseldorf, ISI.


Van Valin, Robert D., Jr., *A summary of Role and Reference Grammar*. ms.