

# Cascades and Grammar

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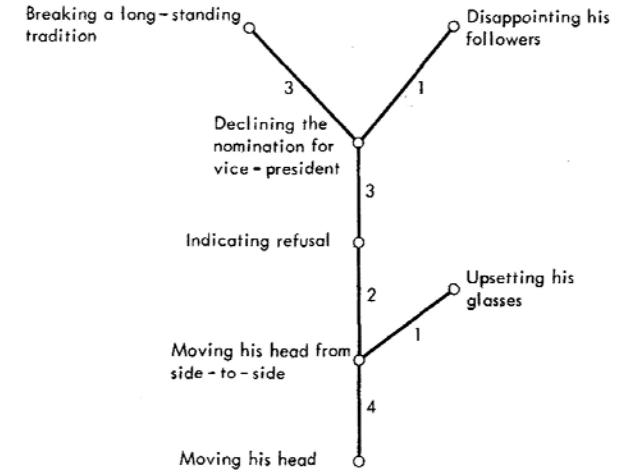
Robert Van Valin's Düsseldorf Retirement Colloquium  
30 September 2017



## 1. Goldman's act-trees

### 1.1 An act-trees

Goldman (1970: 34)



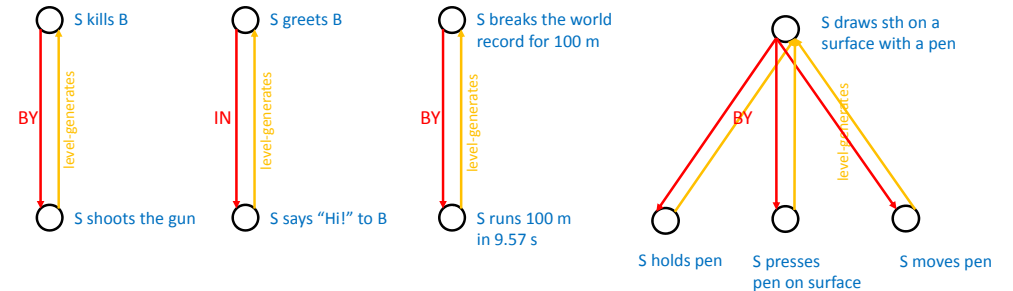
### 1.2 The nature of the multi-level analysis

- A Goldmanian act-tress 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,

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

## 2. Cascades

### 2.1 Definition

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

### 2.2 The upward ↑ 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 ↓ cascade relations IN and BY: substrate

The relation **IN** can be considered an attribute **IMPLEMENTATION, PHYSICAL\_BASIS, 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	moving one's finger
bending one's knee	shrugging one's shoulder
opening one's eyes	turning one's head
puckering one's lips	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

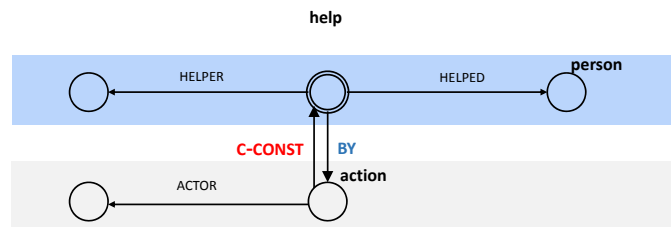
100 most frequent English verbs with primary act-type meaning (according to BNC)  
**basic**, non-basic.

*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.**

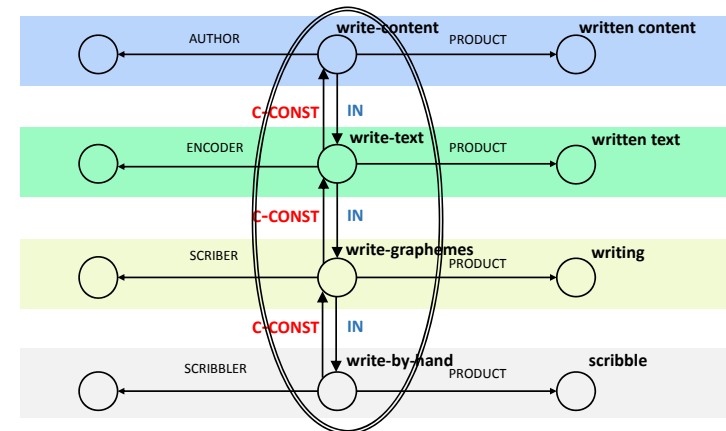
### 3.4 The frame for 'help'

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.

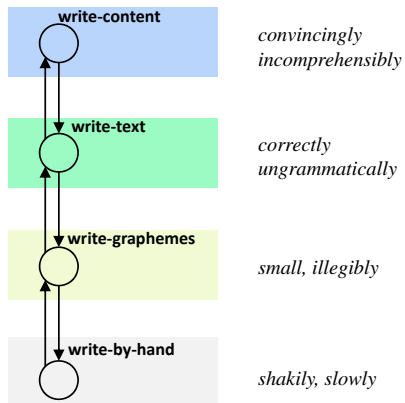


## 4. The internal cascade of the 'write' frame

### 4.1 The structure

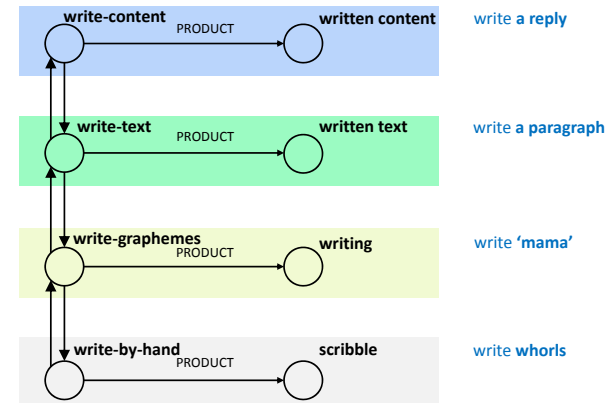


### 4.2 Modification is level-sensitive



- 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.

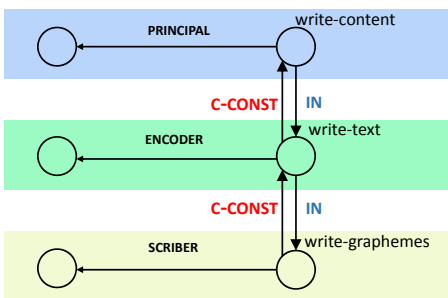
### 4.3 Product specification is level-sensitive



- 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"



*Trump ...  
... writes a letter to Merkel*

*Trump's ghostwriter ...  
... writes a letter to Merkel*

*Trump's ghostwriter's typist ...  
... writes a letter to Merkel*

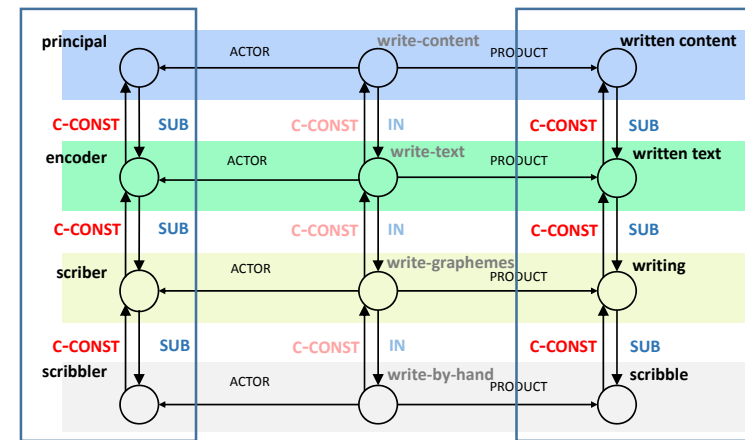
### 4.5 Composition and lexical meaning

- 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.

### 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**

### 4.5 Object cascades related to the action cascade of writing



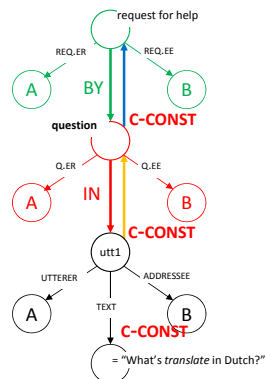
## 5. Semantic cascades and grammar

### 5.1 Austin's speech act cascade

perlocutionary act

illocutionary act

locutionary act



- Locutionary and illocutionary level are reflected in grammar.

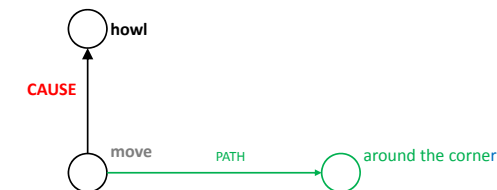
### 5.2 Certain templates

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.



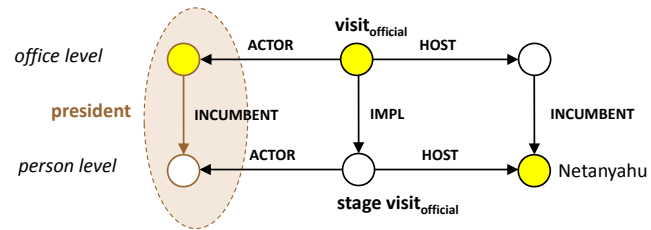
### 5.3 Presidential affairs

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<sub>official</sub>** 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**



### 5.3 Presidential affairs (ctd.)

*the president will change some time* office level

*elect the president* office level (concealed question)

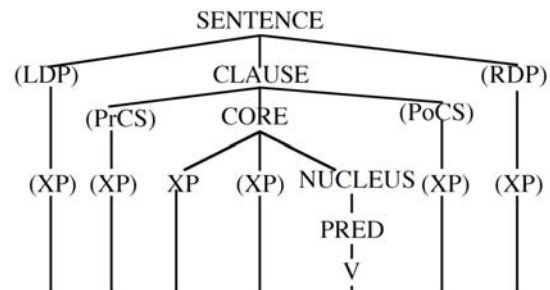
- Certain constructions, including a subtype of concealed questions, require **intensional arguments at a role level.**
- Some constructions involve both levels, notably double object and *as* constructions

*elect someone<sub>person</sub> president<sub>office</sub>*

*elect someone<sub>person</sub> as president<sub>office</sub>*

## 6. Cascades in syntax

### 6.1 Constituent structure



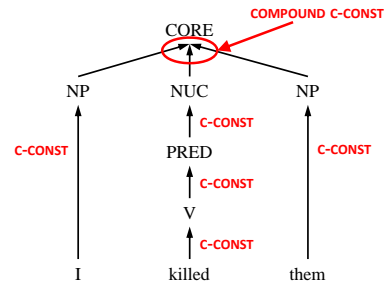
(Van Valin, *Summary of RRG*, p. 2, part of Figure 3)

### 6.2 Cascade relations

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

### 6.3 Model 1: compound level-generation

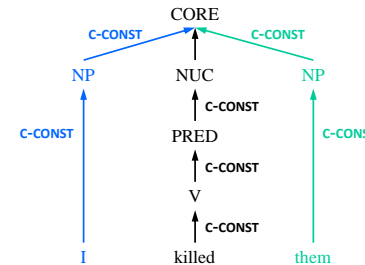
- All constituents of a higher-level unit jointly level-generated it



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

### 6.3 Model 2: straight projection

- No compound projection, but converging projections
- Every daughter level-generates her projection
- Sisters provide the c-context (i.e. necessary and individual) circumstances of level-generation.



### 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

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