

Describing valence-increasing constructions with XMG

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Overview

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2 Data

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- RRG
- XMG

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- Syntax
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Introduction

The aim of this paper is to present the mechanism of the valence-increasing verbal derivation in typologically varied languages

■ Why DeriMo?

We study constructions where morphological derivation leads to syntactic and semantic changes

■ What mechanism?

Theory: Role and Reference grammar (Van Valin and LaPolla 1997; Van Valin 2005)

Framework: eXtensible MetaGrammar (Crabbé et al. 2013; Petitjean, Duchier, and Parmentier 2016)

■ What languages?

Disclaimer: No typologically representative sample, no quantitative data

Selection: Languages demonstrating different variants of constructions in question (Dixon 2000; Peterson 2007)

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Data

- (1) *Avanu-∅ nana-ge bisket-annu tinn-is-id-anu* KANNADA
 3SG-NOM 1SG-DAT biscuit-ACC eat-CAUS-PST-3SG.M
 ‘He fed me a biscuit,’ or ‘He made me eat a biscuit.’

Foley and Van Valin 1984, p. 384

- (2) *N-ä-ï-lyì-í-à* *m-kà* *k-élyà* CHAGA
 FOC-1SG-PRS-eat-APPL-FV c1-wife c7-food
 ‘He is eating food for his wife’

Bresnan and Moshi 1993:49-50 cited in Pykkänen 2002, p. 17, (2a)

- Transitive base verb + overt derivational affix
- The resulting constructions must have three core arguments (= no peripheral arguments, no adjuncts)
- Causative-of-a-transitive (1) and three-argument applicative (2) constructions chosen to observe the effect of the derivational affix clearly

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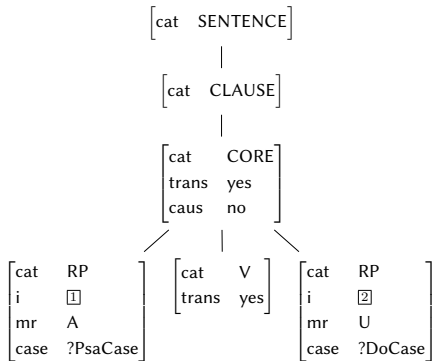
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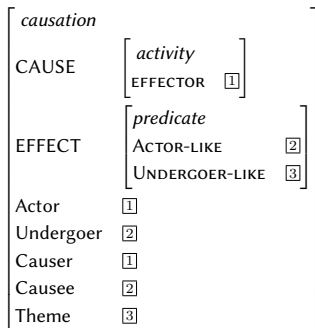
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Syntactic representation



- The layered structure of the clause:
 - SENTENCE:** one or more clauses
 - CLAUSE:** CORE + PERIPHERY
 - CORE:** the predicate with all its semantic arguments
 - PERIPHERY:** adjuncts
- PSA = privileged syntactic argument; corresponds to syntactic subject
- Macroroles are assigned in syntax based on morphological marking

Semantic representation



- Decompositional frames, see Lichte and Petitjean 2015; Osswald and Kallmeyer 2018
- The frame on the verb is based on Aktionsart and RRG Logical structures (Van Valin 2005, pp. 32–42)
- Participants are assigned semantic roles and macroroles (Van Valin 2005, pp. 60–68)

General architecture

Lexicon

all morphemes together with their semantic structure (frames); features percolate to higher levels of syntactic descriptions

Construction Classes

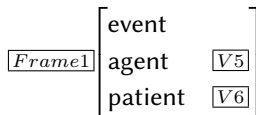
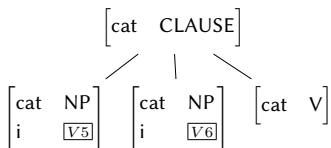
complex classes with several (syn, sem, iface) dimensions; describe generalizations and list varieties of constructions

Language Plugins

one variable with a lot of features describing the grammar, including the list of available constructions; intersects with CC

Most features are defined in the Lexicon and Language Plugins and then used by Construction Classes. Construction Classes introduce constraints on feature unification and disjunctions.

Internal structure



```

class SampleClass
declare ?Clause ?V ?Np1 ?Np2 ?I1 ?I2 ?LanguageFeatures ?F0 ?F1 ?F2
{<syn>{node ?Clause [cat=clause];
  node ?V [cat=v];
  node ?Np1 [cat=np, i=?F1];
  node ?Np2 [cat=np, i=?F2];
  ?Clause -> ?V; ?Clause -> ?Np1; ?Clause -> ?Np2;
  {?LanguageFeatures=[wordOrder=svo]; ?Np1>>?V; ?V>>?Np2} |
  {?LanguageFeatures=[wordOrder=sov]; ?Np1>>?Np2; ?Np2>>?V}};
<frame>{?F0[event,
  agent: ?F1,
  patient: ?F2]}}

```

variables variables as feature values
dimensions features feature values operators

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Adding a syntactic argument

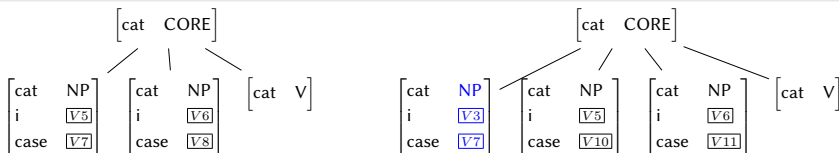
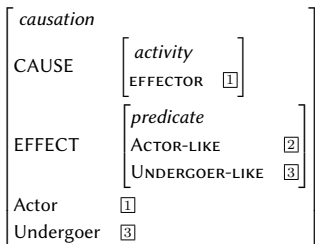


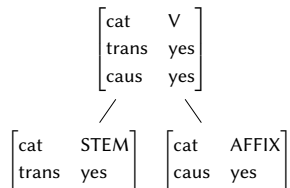
Figure 1: Syntactic trees for a (i) two-argument construction and (ii) the derived three-argument causative construction

- Each representation is derived by one construction class: basic transitive (i) vs. causative-of-a-transitive (ii)
- Features are declared within construction classes, typological variety is introduced by means of logical disjunction
- Each construction class imports a tree shape: 2-arg for (i) vs. 3-arg for (ii)
- Trees are grouped into families by tree shape: trees belonging to the same family can share structural information with each other, but not with other families
- Syntactic derivation of applicatives happens similarly

Semantic derivation of causatives



- 1 ← Frame for the causative construction (1)
- 2 ✓ Subframe combination and feature percolation



- Additional semantic features can be declared (e.g. *manner*, see Generalova 2020)
- Semantic features can be introduced at any level: affix, stem, verb, core

Semantic derivation of applicatives

- The applicative morpheme does not bear a (sub)frame by itself but operates on the frame of the base verb
- If a suffix indicates the semantic role of the applicative object: a categorical feature `applied object + semantic role as value` (`ben`, `loc`, etc.)
- If there is a single applicative suffix in a language (“morphologically non-distinct applicative construction marker”, Peterson 2007, p. 43): disjoin all varieties, select the correct semantic role once all the participants are known
- **Problem:** difficult to determine the semantic role of the participant in the applicative construction from its syntax → **work in progress, stay tuned :)**

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Conclusion

- The syntactic derivation is approached not as modification of the base structure, but as a requirement of unification with another set of features.
- The mechanism of syntactic derivation for both causative and applicative affixes is fairly similar.
- In contrast, mechanisms of semantic derivation used in causative constructions differ from those taking place in applicative constructions.
- Morphologically non-distinct applicative markers require further attention.
- The methodology can be extended to handle not only valence-increasing constructions.

Thank you!

Your feedback is very welcome:
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These slides will be available at
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Glossary

1	first person	c7	noun class 7	M	masculine
3	third person	CAUS	causative	NOM	nominative
ACC	accusative	DAT	dative	PRS	present
APPL	applicative	FOC	focus	PST	past
c1	noun class 1	FV	final vowel	SG	singular