

Inferencing Valence Changing Morphology

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OUTLINE

- Task Description
- Target Phenomena
- Inference Strategy
- Feedback

TASK DESCRIPTION

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Lexical Rule Types that appear in this Position Class:

▼ verb-pc1_lrt1

X Lexical Rule Type 1:

Name:

Supertypes: ▼

Features:

Add a Feature

Valence-changing operations may modify the valence structure of a verb by adding or removing either a subject or object, possibly including changes to e.g. case frames or adding predicates. **(Experimental)**

X Type: ▼

Most valence-changing operations currently must operate on a known input valence. If both intransitive and transitive inputs are possible, these need to be created as two separate lexical rule types. (This may change in the future).

Should apply to: ▼ targets

Object-adding operations currently only support strict transitive verbs as inputs.
For subject- and object-adding operations, also specify (ignored for other operations):

Predicate:

The added argument/erstwhile subject is at the: ▼ of the complements list.

The added argument must be a(n): ▼

} Adding
Operation

Add a valence-changing operation

TARGET PHENOMENA

TARGET PHENOMENA

Adding

Subject-adding:

- Causative

Object-adding:

- Applicative
- Benefactive

Removing

Subject-removing:

- Anticausative
- Resultative

Object-removing:

- Deobjective
- Absolutive
- Antipassive

Demoting

Subject-demoting:

- Passive

INFERENCE STRATEGY

GENERAL INFORMATION

- Determining operation type
 - Grams
 - E.g. **caus** → Subject-adding operation
- Determining the transitivity of the verb class that the morpheme attaches to
 - BASIL (Howell 2020; Howell and Bender 2022)

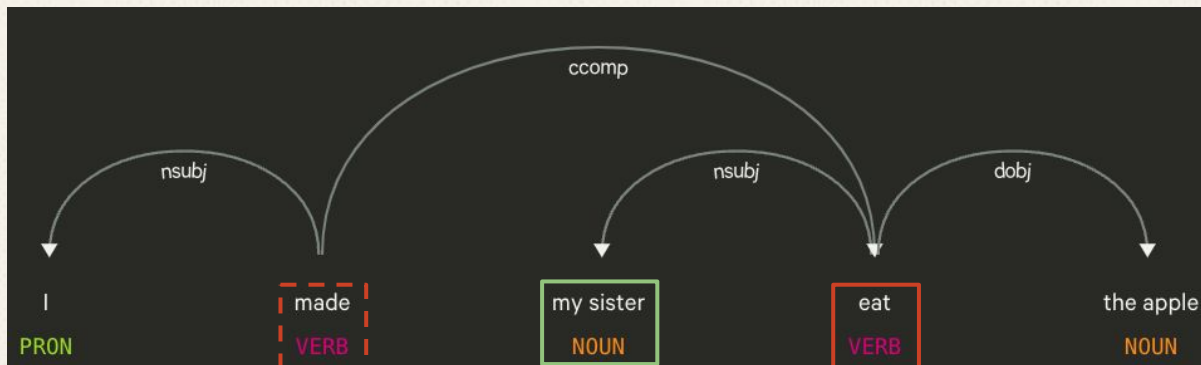
ADDING OPERATIONS

- Collecting predicate information
 - Grams
 - E.g. **caus** → [PRED “*causative*”]
- Detecting the position of the added argument (object-adding) / erstwhile subject (subject-adding) in the COMPS list
 - Enriched xigt generated by INTENT (Georgi 2016)
 - Aligning the root and its verb, noun, and preposition dependencies in the English translation to the gloss of the source language (word2vec)
 - Make use of the characteristic of the phenomena in English translation (details in the next slides)

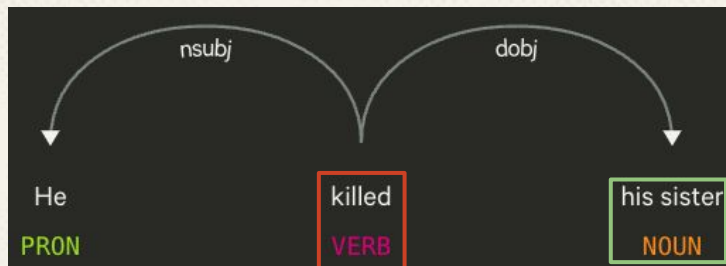
ADDING OPERATIONS

- Subject-adding operation (erstwhile subject):
 - Causative

Transitive



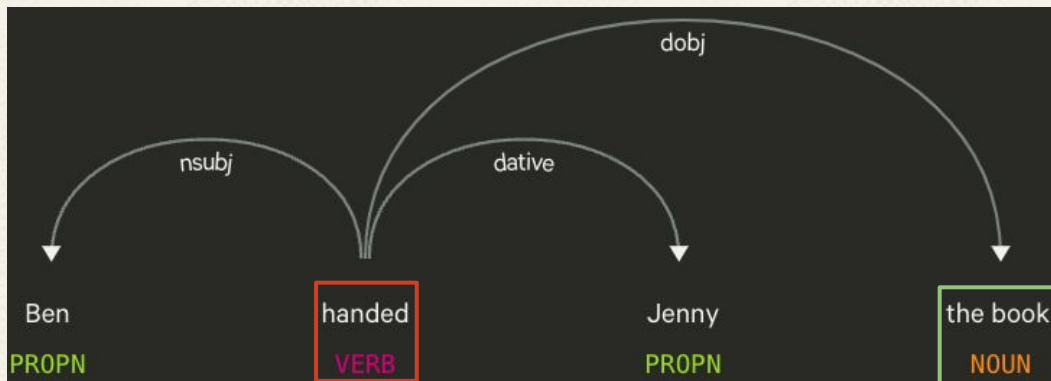
Intransitive



= He made his sister **die**.

ADDING OPERATIONS

- Object-adding operation (added argument):
 - Applicative and Benefactive



*Object-adding operations currently only support strict transitive verbs as inputs

ADDING OPERATIONS

- Detecting the part of speech of the added argument

FEEDBACK

References

- Curtis, Christian M. 2018. A parametric implementation of valence-changing morphology in the LinGO Grammar Matrix. Master's Thesis, University of Washington.
- Howell, Kristen. 2020. Inferring Grammars from Interlinear Glossed Text: Extracting Typological and Lexical Properties for the Automatic Generation of HPSG Grammars. Ph.D. thesis, University of Washington.
- Howell, Kristen and Emily M. Bender. 2022. Building Analyses from Syntactic Inference in Local Languages: An HPSG Grammar Inference System. Northern European Journal of Language Technology, 8(1). doi:10.3384/nejlt.2000-1533.2022.4017. <https://nejlt.ep.liu.se/article/view/4017/3515>.
- Georgi, Ryan. 2016. From Aari to Zulu: Massively Multilingual Creation of Language Tools Using Interlinear Glossed Text. Ph.D. thesis, University of Washington.