How does morphology fit into construction grammar theories? Here, we treat morphological units as constructions and present a formal analysis of several morphological phenomena in English. This entails:

- describing **productivity** (which units can combine) and **compositional** (how they combine to give shape and meaning to an expression)
- handling **nonconcatenative** morphographies
- representing **paradigmatic** structure

### Construction Grammar (CxG)

Construction Grammar (CxG) views a language as an organized inventory of expressive conventions, known as constructions. Constructions pair (lexical and/or grammatical) forms with (semantic and/or pragmatic) functions, at different levels of abstraction. Formation functions present at the discourse level all the way down to subword units count as constructions. Language learning is taken to be the process of recognizing constructions in context and generalizing them to new situations.

Here we adopt the Embodied Construction Grammar (ECG) formalism, which provides a precise notation and computational parsing tools for analyzing the forms of constructions and their meanings in terms of embodied semantics. We have extended ECG to support **morphological constructions**, the focus of this work.

### Challenges

**Morphological compositionality**

- General: construction, function, form, feature
- Specific: root, affix, bound root, bound affix

**Semantic Specification of mover**

The output of the ECG analyzer for the string “mover” given our grammar, this shows form and meaning schemas arrived at via composition of the verb stem and suffix. Note that role bindings indicate correspondence (identity) among the mover and protagonist’s roles of the Noun schema and the referent of the derived noun.

### Future work

- Descriptions of more constructions in English and other languages
- A formal constructional/cognitive account of morphomology
- Algorithms for learning morphological constructions

### Inheritance hierarchy for nominal constructions

Solid lines show inheritance; dotted lines show constituency. Every noun has an inflectional constituent; type constraints ensure the correct form (e.g., berry = berries; hospital = hospitals but hospitalize).

### Inheritance hierarchy for verbs

Circled portions indicate the two subregular paradigms identified by Bybee & Skibin (1982). A paradigm is defined by phonological characteristics and inflectional patterns shared by a group of verbs.