A Labeling-based Account of Japanese Imperatives*

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1. Introduction

- Problems of Projection (POP) (Chomsky 2013, 2015)
- Core syntactic operations are connected with the need for Syntactic Objects (SOs) to be labeled.
- We explain how a POP-based computer model constructs the derivations of basic imperative sentences in Japanese.
- We examine a real-world application of this model.
- Can a model of syntax have applications for disaster warnings?

2. Core assumptions

Chomsky (2013, 2015):
- The phase heads v* and C have uninterpretable phi-features uPhi.
- uPhi are inherited by T from C.
- uPhi are inherited by a verbal root from v*.
- A Labeling Algorithm determines the label of a syntactic object (SO) by finding prominent features that are capable of labeling (e.g., phi-features).

(a) X is strong enough to label

(b) X is too weak to label

(c) No label

(5) Propositions about (4):
- The verbal root V_shite 'please do' contains a V-V serial verb construction (cf. Nishiyama 1998) consisting of two verbal roots that Merge with a single v*.
- V_v is part of the verbal projection (cf. Sugita 2009).
- v* assigns a subject theta-role
- Both verbal roots, shite and kuda, essentially have a single subject.

3. Derivation Target

(4) Minna-san wa hinan-shite kudasai Everyone-Top evacuate-do please Everyone, please evacuate.

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(Adapted from a Nemuro, Hokkaido evacuation call)

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4. Cost

- This computer model automatically computes the cost of core operations in a derivation.

(7) Cost:
- Merge Cost: add 1 for Merge of X and Y.
- Feature Inheritance Cost: add 1 for inheritance of features from X by Y, regardless of the number of features involved.
- Feature Checking Cost: add 1 for checking of features on X by features of Y, regardless of the number of features involved.

- Costs calculated for the derivation of (4):
- Merge Cost: 11; Feature Inheritance Cost: 3; Feature Checking Cost: 5

5. Conclusions

- We’ve shown how:
  - this model automatically generates a Japanese imperative construction.
  - this model calculates cost of a derivation.
  - Research questions for future work.
- Can this model automatically generate a wider variety of imperative constructions in Japanese?
- What is the most accurate way to calculate cost of a derivation?
- How best can information about cost be used?
- Can cost be linked to cognitive processing load, as measured in psycholinguistics experiments?
- There may be real-world applications for this type of model, especially if cost can be linked to cognitive processing load.

References:


