Subject-Object Asymmetries in Korean Sentence Comprehension
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Why are SRCs easier than ORCs in Korean?
- Subject-extracted relative clauses (SRCs) are easier to process than object-extracted relative clauses (ORCs) in many languages (e.g., French, Holm & O’Connor, 1981; Dutch: Frazer, 1987; English: Xing & Just, 1991; German: Mecklinger et al., 1995).
- The same asymmetry is observed in Korean (in terms of comprehension rate/reaction time/reading time: Lee, 2007 and Kwon, 2008).

Why Is Korean Interesting?
The clause type is ambiguous until the listener reaches the end of the clause due to these properties.
- SOV word order: the verb comes in the end of the clause.
- pre-nominal RCs: a relative clause comes before the head noun.
- pro-drop: the gap in a relative clause is potentially confused with an empty pronoun.
- Since sentence processing crucially involves the determination of its grammatical structure, processing difficulty should be related to uncertainty (i.e., grammatical derivations for a given string).
- Therefore, we have constructed a small probabilistic grammar of Korean to...processing difficulty at a certain word is formalized as any downward change of entropy value at that word (Hale, 2006).

Entropy Reduction
Processing difficulty correlates with the uncertainty about the future grammatical derivations.
- Since sentence processing crucially involves the determination of its grammatical structure, processing difficulty should be related to uncertainty (i.e., entropy in information theory) about the future grammatical derivations for a given string.
- Therefore, we have constructed a small probabilistic grammar of Korean to cover the four different types of clauses that are potentially indistinguishable from relative clauses, with an empty subject or object (thus 4 X 2 = 8 sentence types).
- The processing difficulty at a certain word is formalized as any downward change of entropy value at that word (Hale, 2006).

Correct Predictions for Relative Clauses
Our information theoretical model predicts the SRC advantage.
- The asymmetry at the head noun position drives the overall difference. This is because the ORC prefix before the head noun has more possible alternative continuations than the corresponding SRC prefix.

Further Predictions for Other Types of Clauses
Our model further predicts the same asymmetry for noun complement clauses.
- A subject advantage is predicted for noun complement clauses with a pro for the same reason as relative clauses since the two types share the same form of the prefix.

It also predicts great processing load when clause-type disambiguation occurs.
- The clause type is determined at the states with double-circles, which correlate with the positions where great comprehension difficulty is predicted.

References