Background and Motivation

Background

It has been claimed (e.g., Givon, 1984; Birner & Ward, 1998; Gibson et al., 2005) that discourse-old entities tend to precede discourse-new entities in a sentence. We will refer to this tendency as the Old-New Constraint (ONC).

Kaiser & Trueswell (2004) investigated the effects of information structure on processing non-canonical word orders in Finnish. Specifically, Kaiser & Trueswell compared the processing of canonical word orders (Subject-Verb-Object, SVO) and non-canonical word orders (Object-Verb-Subject, OVS).

According to Kaiser & Trueswell, canonical word orders are felicitous in a variety of discourse contexts (Subject-Old / Object-Old, Subject-New / Object-New, Subject-Old / Object-New). However, non-canonical word orders are only felicitous when they satisfy the ONC (Object-Old / Subject-New).

Kaiser & Trueswell presented critical sentences in context, manipulating:

1. Information structure (ONC satisfied / ONC violated) and
2. Word order (SVO / OVS).

Motivation

Two ways to think about information structure and word order:

Kaiser & Trueswell: Information structure and word order (syntactic information) are two non-independent factors that affect sentence comprehension: specifically, information structure can alleviate the difficulty associated with the processing of non-canonical (syntactically more complex) word orders.

An alternative: Information structure and word order are independent factors that affect sentence comprehension.

Experimental Design

Each trial consisted of a context sentence (presented all at once) followed by the target sentence (presented word-by-word). The materials were presented with 20 items from an unrelated experiment and with 20 fillers.

Design:

2 x 2 x 2

Factors:

Context (Neutral / Supportive: mentioning one of the nouns in the critical sentence)

The Old-New Constraint satisfaction (The Old-New Constraint satisfied / The ONC Violated)

Word Order (Subject-Verb-Object / Object-Verb-Subject)

Experimental Procedure

Self-paced moving-window reading paradigm (40 participants, 32 items).

Participants: native Russian speakers; mean age: 25.1 years.

Each trial consisted of a context sentence (presented all at once) followed by the target sentence (presented word-by-word). The materials were presented with 20 items from an unrelated experiment and with 20 fillers.

Results

A context x ONC-satisfaction interaction:

F(1,39)=4.69; MSE=177249; p<.05; F2(1,30)=3.61; MSE=196642; p=.067

[Neutral context: At the police station an interrogation was taking place.]

Supportive context: In the interrogation room a cop and a lawyer were discussing something.

None of the data were significant.

Summary and Conclusions

Summary

Two independent effects of information structure (ONC satisfaction) and word order were observed with no interaction.

The present experiment does not replicate the results of Kaiser & Trueswell (2004).

Work in-progress: Same design using only feminine nouns (no object-marking ambiguity).

For the subset of items with feminine nouns in the current experiment (8/32) the pattern of results is the same as for all the items.

Conclusion

These results are consistent with a hypothesis whereby information structure and word order are two independent factors that affect online sentence comprehension.

References:


