The role of redundant marking in learning

Shira Tal & Inbal Arnon, Hebrew University of Jerusalem

Why do languages maintain redundant cues? Redundant marking is attested across language systems: for example, multiple languages redundantly encode thematic assignment by both word order and case marking [1]. At the same time, speakers seem to avoid redundancy in speech, omitting (or reducing) more predictable elements, a pattern consistent with a bias for efficient communication [see 2]. How can we reconcile the presence of redundancy with speakers' tendency to avoid it in production? We propose learning as a possible link: redundant cues can be facilitative in certain learning situations, leading to increased redundancy when conversing with learners. This prediction is in fact compatible with communicative efficiency if speakers' productions are sensitive to the comprehension ease or difficulty within a conversation [2]. In particular, we predict that (1) redundant morphological marking can facilitate learning, and (2) speakers use more morphological redundant marking when conversing with learners. Here, we focus on the first prediction by looking at the potentially facilitative role of redundant morpho-syntactic marking on learning. While the combination of linguistic and non-linguistic cues can benefit learning [3], previous work has not examined the effect of having redundant linguistic cues. We test this hypothesis in an artificial language learning study with Hebrew-speaking children (mean age 7;9, N=60). Children were exposed to one of two versions of the language: one in which word order alone (non-Hebrew like OSV) serves as a cue for thematic assignment and one in which both word order and case marking on the object serve as cues. Following exposure, children's comprehension was assessed by having them match pictures to sentences, and production was assessed by asking them to describe pictures in the novel language. If redundant marking helps learning, then children should show better learning in the redundant-condition, despite its' greater complexity. Results show that children successfully learned the language (better than chance, $p<0.0001$) in both conditions. As predicted, children showed better learning in the redundant-condition (91% vs. 65%, $p<0.0001$, Figure 1). In addition, production of case marking facilitated production of correct word order: despite the additional effort involved in producing it, word order was more accurate when case marking was produced ($p<0.001$, Figure 2). Taken together, these findings suggest that redundant marking can be facilitative in learning circumstances. We discuss possible implications for the link between language complexity and characteristics of interlocutors.

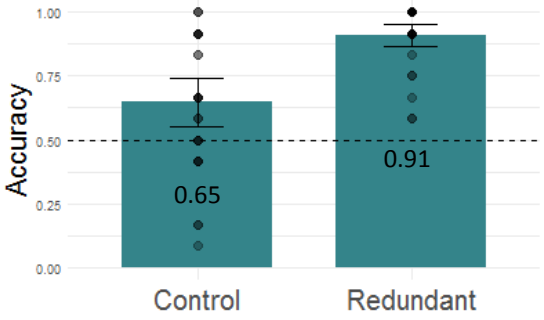

Figure 1: Accuracy scores by language condition. The dashed line indicates the chance level; error bars indicate standard errors of the means; individual points indicate by-participant means.

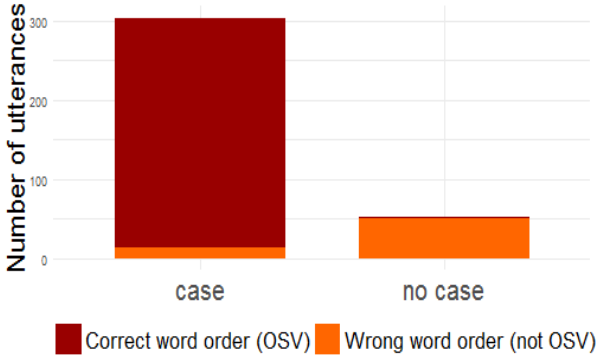

Figure 2: Production of correct word order (OSV) by production of case marking for children in the redundant-language condition.

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