What Factors Influence Conceptual Salience Assigned to Nominals of Sentences? Evidence from Eye Fixation on Visual Images

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This experimental study examines the factors that impact the extent of salience given to referents of nominal phrases (NPs) in a sentence. It specifically investigates the effects of syntactic (grammatical statuses and word orders), semantic (thematic roles and animacy), and pragmatic (topicality) facets of language on the salience of NPs. Cognitive linguistics, especially Cognitive Grammar, uses the concept of salience (i.e., focal prominence) to explain a broad range of linguistic phenomena semantically and conceptually (Talmy, 2003; Langacker, 2008). A theoretical framework that takes a visual stance in analyzing language uses the following concepts of vision: *figure/ground, the onstage model, profile/base, trajector/landmark*, and *grounding*. According to Langacker (1987), phrasal or sentential subjects obtain the status of trajector (i.e., the most prominent thing) and objects acquire that of landmark (i.e., the second prominent thing). As such, he directly connects conceptual prominence and grammatical statuses; however, the salience of NPs could be complicatedly associated with several other factor as well. Thus, even a sentence object (or an accusative nominal) may be the most prominent among all participants in some situations.

To prove this assumption, we conducted an eye-tracking experiment (n = 22) adopting the visual world paradigm in a broad sense (Tanenhaus et al., 1995). The experiment provided sentences and visual images equivalent to the meanings of those sentences while recording how participants viewed such drawings, especially the areas they gazed at in a picture. To compare the effects, each image was presented with multiple kinds of sentences, modifying NPs' grammatical cases (e.g., nominative and accusative cases), word order (e.g., the first and the second NPs), thematic roles (e.g., agent and patient), animacy, and topicality. Analyzing the influence of these items on participants' eye fixations showed that, as a whole, two syntactic factors—both grammatical statuses and word order—were less responsible for the prominence of NPs than semantic and pragmatic factors. A multi-regression analysis revealed that contextual focus and theta roles were, respectively, the largest and the second-largest factors that affected participants' fixation durations on distinct areas of images. Although some results were incoherent or did not show statistically significant differences, the experiment exhibited a certain level of the tendency mentioned above.

In conclusion, our visual-world eye-tracking study was constructed based on a theory stressing the language-vision relationship and explaining language in terms of vision. However, the results suggested that grammatical statuses (the subject or the object of a sentence) had little contribution to how participants focus on NP referents in a sentence. This means that, to comprehend prominence broadly and realistically, it is necessary to consider that a variety of factors not only from the view of syntax but also in light of semantics and pragmatics, have a considerable effect on the extent of salience of NPs in a complex way.

References

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