

Verb-Induced Simulations Affect Sampling Patterns in Choice Contexts

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When understanding language, people build and integrate multimodal simulations, which represent traces of their experience with sensations, perceptions, and patterns of action (Barsalou, Santos, Simmons, & Wilson, 2008). Here we aimed to determine the effect of integrating verb-induced simulations (evoked by lexical aspect) with context-induced simulations (evoked by disjunction vs. conjunction sentences), as reflected in visual sampling patterns. As shown in Rosen and Rosenkoetter (1976), two objects are sampled ‘dimensionally’ i.e. eyes go back and forth between them in choice contexts and ‘holistically’ i.e. eyes investigate each object once in no-choice contexts. Given that atelic verbs simulate greater event accessibility e.g., are processed slower than telic verbs (cf. Coll-Florit & Gennari, 2011), we predicted that atelic verbs would generate more dimensional sampling in disjunction (choice) contexts than in conjunction (no-choice) contexts and that telic verbs would neutralize this processing difference.

We tested these predictions within the ‘visual world’ paradigm (Cooper, 1974; Tanenhaus, Spivey-Knowlton, Eberhard, and Sedivy, 1995). We recorded participants’ eye movements and response latency as they matched pairs of objects to spoken sentences featuring disjoined and conjoined object names. As a spoken word refers to an object in a visual display, attention is rapidly and automatically allocated toward that object, thereby activating associated conceptual representations (Altmann, in press). In Experiment 1, the sentence verb was atelic (e.g., *Nancy examined an ant or/and a cloud*). In Experiment 2, the sentence verb was telic (e.g., *Michael found a zebra or/and a padlock*). In each experiment, we employed a 2 (Context: Disjunction vs. Conjunction) x 2 (Sampling: Dimensional vs. Holistic) factorial design and two dependent variables: Average number of saccades and saccadic latency.

We found that visual sampling depends on both context and verb type. As expected, atelic verbs led to more dimensional sampling in disjunction vs. conjunction trials. Interestingly, however, instead of neutralizing contextual differences, telic verbs generated more holistic sampling in disjunction trials. Saccades were launched earlier following telic vs. atelic verbs, but in choice trials this processing advantage was subsequently reversed. We interpret the results to reflect a simulation-integration effort in choice contexts, thus shedding further light on the decision-making process.

References:

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