March 18, 2019

Dear Dr. Holyoak and members of the Editorial Board,

Please find attached a copy of our manuscript, “When redundancy is rational: A Bayesian approach to ‘overinformative’ referring expressions.” This manuscript is our original work, has not been previously published, and is not currently under consideration elsewhere. We would appreciate your considering it for publication in Psychological Review.

With this work we provide a unified account of referring expression choice that solves a long-recognized puzzle for rational theories of language use: why speakers' referring expressions often and systematically exhibit seeming overinformativeness. We provide a production model of referring expressions couched within the Rational Speech Act framework, which includes a key innovation: we assume graded rather than deterministic meanings. Computing an utterance’s contextual informativeness with respect to these graded meanings in many cases yields ‘overinformative’ referring expressions as the rational choice. This happens when what seems like the prima facie sufficiently informative utterance is in fact noisy and may lead a literal listener astray; adding redundant modifiers increases the probability of successful communication. This simple modification to the Rational Speech Act approach allows us to capture: the basic well-documented asymmetry for speakers to be more likely to redundantly use color adjectives than size adjectives; the interaction between sufficient dimension and scene variation in the probability of redundancy; and typicality effects in both color modifier choice and noun choice. We evaluate the model on three different production datasets that contain these phenomena. The length of the manuscript is attributable to the need to describe the model in sufficient detail, provide evaluations on multiple datasets and phenomena, and allow for discussion of what we see as very interesting questions that this work raises.

Given the experimental semantics / pragmatics focus of the paper, we would like to suggest Chris Cummins as Responsible Editor.

Thanks for your consideration. Please let us know if you require additional information.

Sincerely,

Judith Degen

Robert X.D. Hawkins

Caroline Graf

Elisa Kreiss

Noah Goodman