

Public Abstract

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Lexicographic choice refers to choices that are made in a lexicographic way. Just as the way one would find a word from a dictionary, those who make decisions in a lexicographic way would process one piece of information at a time in a certain order until they arrive their decisions. They would consider other pieces of information only if the information under considration doesn't yield a dominant decision. Thus, in what order information is considered and how decision makers finalize their decisions are important factors in understanding lexicographic choice. Traditionally, however, lexicographic choice has usually been investigated from an axiomatic perspective, such as one of binary relations, semiorder (Luce, 1956), which makes it difficult to test the theory against empirical data. I, therefore, present a probabilistic model of lexicographic choice, where each decision maker is allowed to consider multiple pieces of information in their own order. Also, the present model incorporates the concept of thresholds in an attempt to describe how decision makers come to their decisions. Specifically, one would compute difference in the information under comparsion between choice alternatives, and then compare it to his or her own threshold in order to make a decision. If the difference exceeds the threshold, then he or she would reach his or her decision. Otherwise, he or she would move on to the next information and keep comparing it to each other. One of primary features of the current model is that it allows decision makers to make error in stating those decisions. By allowing for some departures from such deterministic decisions, the model now turns into a probabilistic one that enables researchers to fit the model to the observed data. In the present paper, I detail mathematical specifications of the model. And, I utilize Bayesian statistics in estimating model parameters, so priors and posterior inference on parameters of interest are explicitly described. I carry out two analyses: one with simulated data for a parameter recovery study and one with the data from Davis-Stober, Brown, and Cavagnaro (2015). Implications of the current model are discussed in the paper.