Process and Content in Decisions from Memory

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Abstract

We present a general framework for building formal models of naturalistic memory-based decision making. Our framework implements established theories of memory search and decision making within a single integrated cognitive system, and uses computational language models to quantify the thoughts over which memory and decision processes operate. It can thus describe both the content of the information that is sampled from memory, as well as the processes involved in retrieving and evaluating this information in order to make a decision. The models within our framework can be fit to recall and choice data, and can quantitatively predict choice probability, length of deliberation, retrieved thoughts, and the effects of decision context. We showcase the power and generality of our framework by applying it to study risk perception, consumer behavior, financial decision making, ethical decision making, legal decision making, food choice, and judgments about well-being, society, and culture.