

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Process and Content in Decisions from Memory

Permalink

<https://escholarship.org/uc/item/2ms6w1sh>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 42(0)

Authors

Zhao, Wenjia Joyce

Richie, Russell

Bhatia, Sudeep

Publication Date

2020

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Process and Content in Decisions from Memory

Wenjia Joyce Zhao

University of Pennsylvania, Philadelphia, Pennsylvania, United States

Russell Richie

University of Pennsylvania, Philadelphia, Pennsylvania, United States

Sudeep Bhatia

University of Pennsylvania, Philadelphia, Pennsylvania, United States

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.