Memory and Cognitive Ability

Objective

To **examine** how the dynamics of recall processes are affected by the control processes involved with search termination, to **study** the implications of these control processes for the development of theoretical models of recall, and to **develop** new measures of cognitive ability that can be easily adapted for laboratory and web-based experiments.
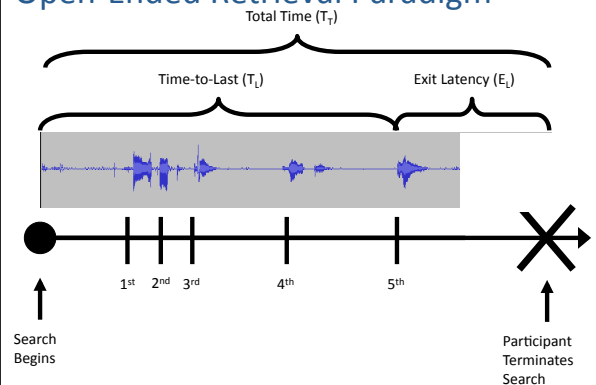
Background & Motivation

Research on *memory processes* is directed at understanding the metacognitive control processes involved with the decision to terminate memory search. Specifically, research examines the impact of search termination decisions on the natural retrieval dynamics involved in free recall, and how these retrieval dynamics inform the development of computational models of memory. Research on *cognitive ability* focuses on the development and validation of novel measures of working memory, visual ability, and problem structuring ability, and the relationship of these measures to quantitative reasoning and language comprehension.

Research Questions

>> **What is the impact of allowing participants to self-terminate the memory search process on recall processes?** Our research examines how retrieval dynamics and output are affected by allowing people to terminate memory search on their own.

>> **How is the decision to terminate memory search affected by metacognitive processes and what task factors affect these decisions?** Our research studies the psychological processes underlying peoples decision to terminate retrieval, and how these processes interact with task-related variables.

>> **What are the necessary properties of valid measures of cognitive ability, and in what ways do measures of cognitive ability inform our understanding of quantitative reasoning and language comprehension?** Our researchers are developing novel measures of working memory and cognitive ability that improve upon prior measures, and which can be implemented with minimal intervention on the part of the experimenter.

Open-Ended Retrieval Paradigm

Voice onsets in free recall task for a participant who recalls 5 words in a self-terminated memory task. The self-terminated memory paradigm allows us to examine how people terminate retrieval and how self-termination affects retrieval dynamics.

FOR MORE INFORMATION

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