

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Epistemic Extrapolation: Inferring the Fine-Grained Structure of Others' Knowledge From Minimal Evidence

Permalink

<https://escholarship.org/uc/item/5dc2r97p>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 48(0)

Authors

Morris, Ben

Jara-Ettinger, Julian

Publication Date

2026

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

Epistemic Extrapolation: Inferring the Fine-Grained Structure of Others' Knowledge From Minimal Evidence

Ben Morris

Department of Psychology, Yale University

Julian Jara-Ettinger

Department of Psychology, Yale University

Abstract

Successful communication depends on rapidly forming expectations about what others are likely to know, yet little is understood about how these expectations are constructed and updated. We introduce a novel paradigm for studying epistemic extrapolation: the ability to infer another person's knowledge from limited evidence. Across two studies, participants completed a trivia-style recognition task involving public figures and judged what a hypothetical other person was likely to know. Study 1 ($n = 100$) measured baseline expectations without person-specific information, assessing how closely participants' judgments tracked population-level knowledge patterns. Study 2 ($n = 250$) tested epistemic extrapolation across 10 conditions by providing sparse knowledge profiles (another player's response to 1-2 items) and asking participants to infer item-level knowledge. Participants showed accurate general expectations about others' knowledge and systematically updated these expectations from minimal evidence. These findings suggest that people infer others' knowledge by reasoning about the organization of knowledge within a domain.