LS Brown Bag Colloquium Series

Co-hosted by MPES & LS

Learning to Reason about Causality in Complex Problem Spaces: The Affordances of Virtual Environments for Understanding Action at an Attentional Distance and other Aspects of Complexity

Tina Grotzer
Harvard Graduate School of Education

Thursday, Nov. 20, 12:30-1:30pm
Annenberg 303

Environmental justice will be one of the defining issues of our time. Thinking effectively about the consequences of our actions in a complex world involves being able to reason about a variety of forms and features of causal complexity. This talk will introduce the ways in which our human cognitive architecture is not well suited to dealing with these elements from the stance of perception, attention, and cognition. Then I will focus in depth on one concept, action at an attentional distance, through the lens of the causal induction research and will consider how it impacts understanding of ecosystems dynamics and environmental issues. I will share research findings on students' reasoning and our work on the promise of virtual environments and the affordances that they provide for revealing and building students' ability to reason about these aspects of complexity.

Tina Grotzer *is an associate professor of education at the Harvard Graduate School of Education and a senior researcher at Project Zero. Her research focuses on how causal reasoning interacts with complexity and has four dominant strands: 1) How reasoning about causal complexity interacts with our decisions in the everyday world; 2) How causal understanding develops in authentic, but supported contexts; 3) How causal understanding interacts with science learning (towards the goal of developing curriculum to support deep understanding); and 4) public understanding of science given the intersection of the nature of science, causal complexity, and how our minds work. Tina is the PI of the Causal Learning in the Classroom Project (CLiC) and Co-PI with colleague, Chris Dede, on the EcoMOBILE and EcoXPT Projects, funded by NSF. The projects involve investigating how children learn to reason about causal complexity and developing and testing technological tools, including virtual worlds and hand-held mobile devices, to teach the inherent ecosystems complex causal dynamics to middle school students*

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