Intuitive Pedagogical Reasoning:
An Interdisciplinary Workshop

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Introduction

The purpose of this workshop is to develop an area of interdisciplinary research including developmental, educational, and computational perspectives, with the goal of understanding learning in pedagogical settings – settings in which there is a teacher and a learner.

Intuitive pedagogical reasoning describes people's intuitive understanding of situations in which there is a teacher who chooses information to communicate a concept, and a learner who attempts to infer the concept with the knowledge that the teacher is helpful. Pedagogical reasoning potentially plays a critical role in learning from early in life and persisting into adulthood through parent-child interactions, tutoring, formal schooling, and mentoring. Pedagogy has also been proposed to a be the difference between humans and other animals that allows humans to accumulate and pass knowledge through generations. Understanding the roots of pedagogy could thus have important practical and theoretical implications.

The workshop will: 1) Discuss recent advances in the understanding of pedagogical reasoning; 2) Identify outstanding questions critical to the understanding of intuitive pedagogy and it's role in human cognition; and 3) Develop research interests common to the fields of cognitive development, education, and computational modeling.

Topics and Goals

Pedagogical settings are situations with two individuals where one (a teacher) samples data for the purpose of helping the other (a learner) learn. Pedagogical settings occur early in development and continue throughout the life span, and many social structures are explicitly designed to encourage pedagogical learning. As such, a critical question is how do pedagogical settings affect learning?

Recent research in developmental psychology has provided important insight into pedagogical reasoning in childhood. Children appear to differentiate pedagogical situations from non-pedagogical situations, drawing different inferences in each of these settings.

Recent research in cognitive psychology and computational modeling has provided complementary insights. Recent research has investigated the kinds of examples adults choose to help a learner, the inferences adults draw from helpful examples, and proposed a computational model that explains how these inferences are drawn. Additional research in computational modeling has also formalized cultural evolution as iterated learning, providing a framework within which the implications of pedagogy on knowledge transfer may be investigated.

There are important questions and insights to be shared across these groups. For example, what counts as a pedagogical setting and how could children learn to identify pedagogical settings? At what age does pedagogical reasoning appear? How is pedagogical reasoning related to Theory of Mind? How could we infer who is helpful? How does pedagogy impact exploratory play and subsequent learning?

The goal of the workshop will be to build common ground between researchers cognitive development, education, and computational modeling, identifying the key issues related to pedagogical reasoning from each perspective, providing an opportunity for cross-fertilization of ideas, and facilitating interdisciplinary communication and collaboration.

Workshop Format

The workshop will consist of a full one-day program with invited talks divided in two sessions. The morning ses-

sion will begin with theoretical overviews and developmental evidence. The afternoon session will continue focus on adult cognition, formal models, and implications.

The format will be designed to facilitate discussion among the participants. As such, both sessions will begin with 2.5 hours of scheduled talks (with a 20 min break in the middle) to set the stage. Both sessions will be followed by a 30 minute period in which the topics of the morning will be summarized, followed by a question and answer, and discussion session.

Website

For up to date information about the workshop please refer to the workshop website: `http://louisville.edu/psychology/shafto/workshop`.