



CoCo Seminar Series Spring 2019

New Frontiers in Understanding Human Concept Learning

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Psychology**

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**Wednesday April 17, 2019 11:00am-12:00pm
Engineering Building H-9 (Knoll-MacDonald Commons / Watson Commons)**



The way that people learn concepts is a core area of study in cognitive science. In canonical experiments, subjects learn from supervised experience (guess-and-correct) how to classify objects comprised of small sets of binary features into two categories (e.g., Shepard, Hovland, & Jenkins, 1961). We consider three theories that provide strong accounts of classic results on the relative ease of acquisition of benchmark category structures by human learners: Exemplar models including GCM and ALCOVE (Nosofsky, 1984, 1986; Kruschke, 1992), DIVA (Kurtz, 2007), and the Information Complexity Model (Pape, Kurtz, & Sayama, 2015). Further empirical investigation is needed to determine the explanatory power of these successful, yet highly distinct theoretical accounts. We apply a novel method for identifying optimal experiments to distinguish these theories based on selecting category structures that are subsets from available training domains. We report the first experimental data using this approach which shows a clear “win” for one of the competing accounts.

This talk will be presented by Drs. Kurtz and Pape. Dr. Kenneth Kurtz’s research interests include concepts and category learning, similarity and analogy, neural network models of cognition, and knowledge representation. Dr. Pape’s research interests include microeconomic theory, decision theory, and agent-based modeling of complex systems. For more information, contact Hiroki Sayama (sayama@binghamton.edu). <http://coco.binghamton.edu/>