# An action dynamics study of the onset of prediction

**Maryam Tabatabaeian**
University of California Merced, merced, California, United States

**Rick Dale**
University of California, Merced

**Abstract:** A recent approach in cognitive science argues that prediction is a core concept underlying cognition, to the extent that brains could be referred to as "prediction machines" (Clark, 2013). Extending experimental paradigms to explore prediction facilitate tests of this claim. In a previous study we introduced a statistical learning paradigm to detect when participants are predicting during implicit/explicit learning. The results revealed that participants tend to rapidly switch into a predictive mode almost as a discrete strategy. While this intriguing possibility was not directly explored in the original study, in this project we repurposed the task to explicitly explore the onset of predictive behaviors. Through a mouse-tracking task, participants get to learn the statistical structure in a sequence of flashing dots while their mouse movements are being recorded. Findings reveal the level of statistical structure in the environment that triggers the rapid onset of predictive behavior in participants.