

**Title: Measuring the (dis)continuous mind: What mouse- and hand-tracking really reveals about decision making?**

**Speaker: Dirk U. Wulff, University of Basel & Max Planck Institute for Human Development**

**Abstract:**

Recent mouse-tracking and hand-tracking studies use curvature in aggregate movement trajectories to measure the ongoing continuous competition between response options during the process of making a choice (or choosing an action). However, the assumptions underlying this approach, most importantly whether the aggregate trajectory reflects the shape of trial-level trajectories, remain inappropriately assessed. In this talk, I present a novel procedure for clustering mouse- and hand-trajectories. Via the reanalysis of dozens of published datasets, I show that our method detects substantial proportions of types of trajectories that are inconsistent with the aggregate trajectory and the very idea of continuous competition. Our results suggest a less immediate link between decision making and movement trajectories and hence demand caution for the use of mouse- and hand-tracking as window into the decision making process.

**Short Bio:**

Dirk Wulff conducted his predoctoral work at the University of Basel and the Max-Planck Institute for Human Development. After receiving his PhD in Psychology from the University of Basel, Dirk continued his research at the Max-Planck Institute for Human Development as a postdoctoral fellow. Currently, Dirk is a research scientist at the University of Basel and an adjunct researcher at the Max Planck Institute for Human Development. Dirk's research is broadly concerned with understanding the cognitive processes involved in decision making and search. To this end, Dirk conducts empirical and theoretical research using computational modeling, network analysis, natural language processing, and process tracing.