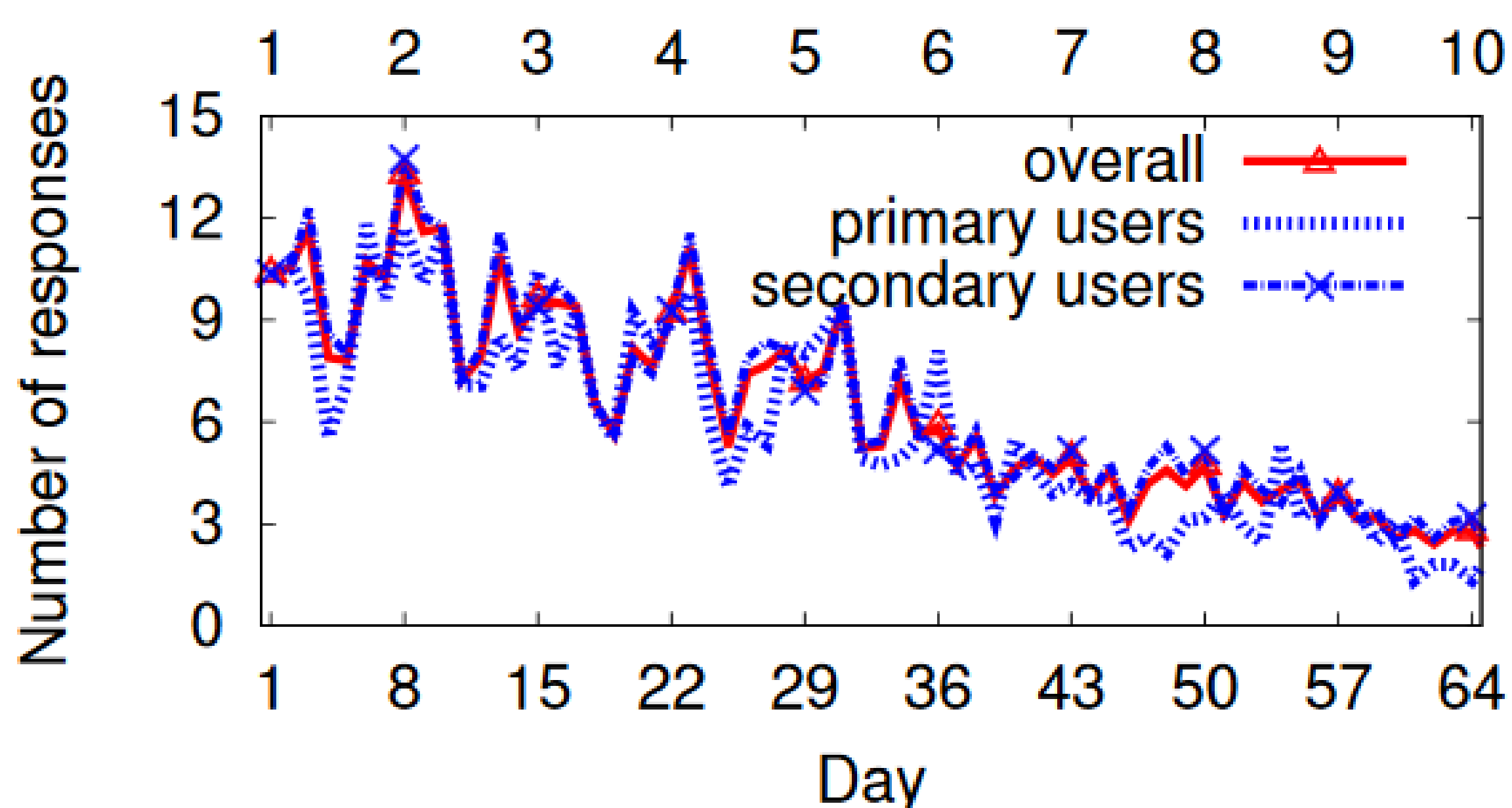


**S&T Campaign: Human Sciences**  
**Human Behavior**  
**Real-World Behavior**

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## Research Objective

- Conducting research over the *long term* (>6 months) and in the *real world* requires “high-burden” methodology (e.g., interrupting participants’ daily lives to have them fill out questionnaires multiple times per day). As a result, participants often fail to sufficiently engage with data collection systems.



Compliance in the StudentLife dataset (Wang et al., 2014)

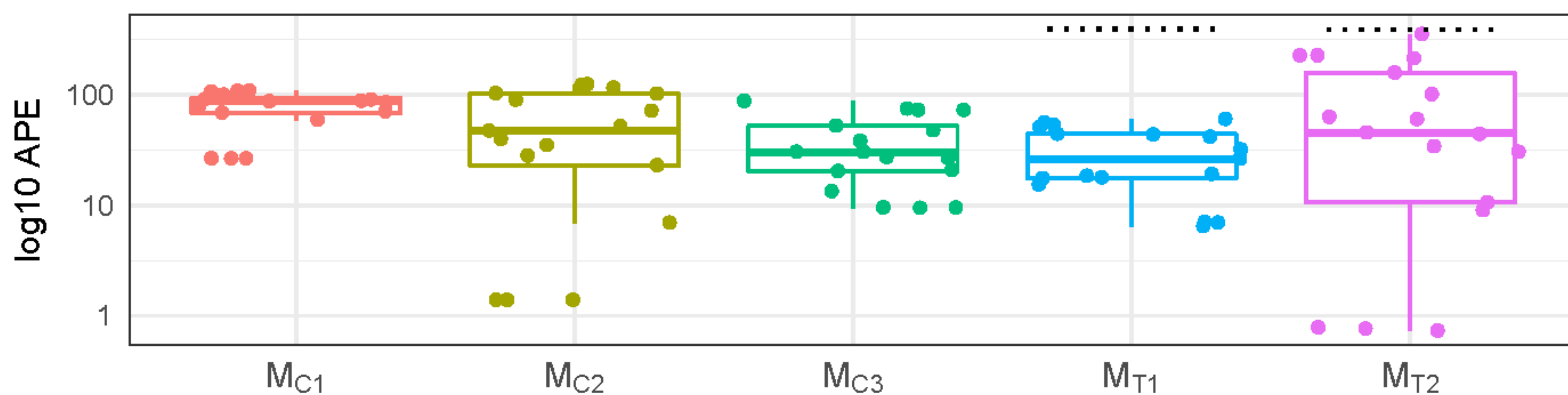
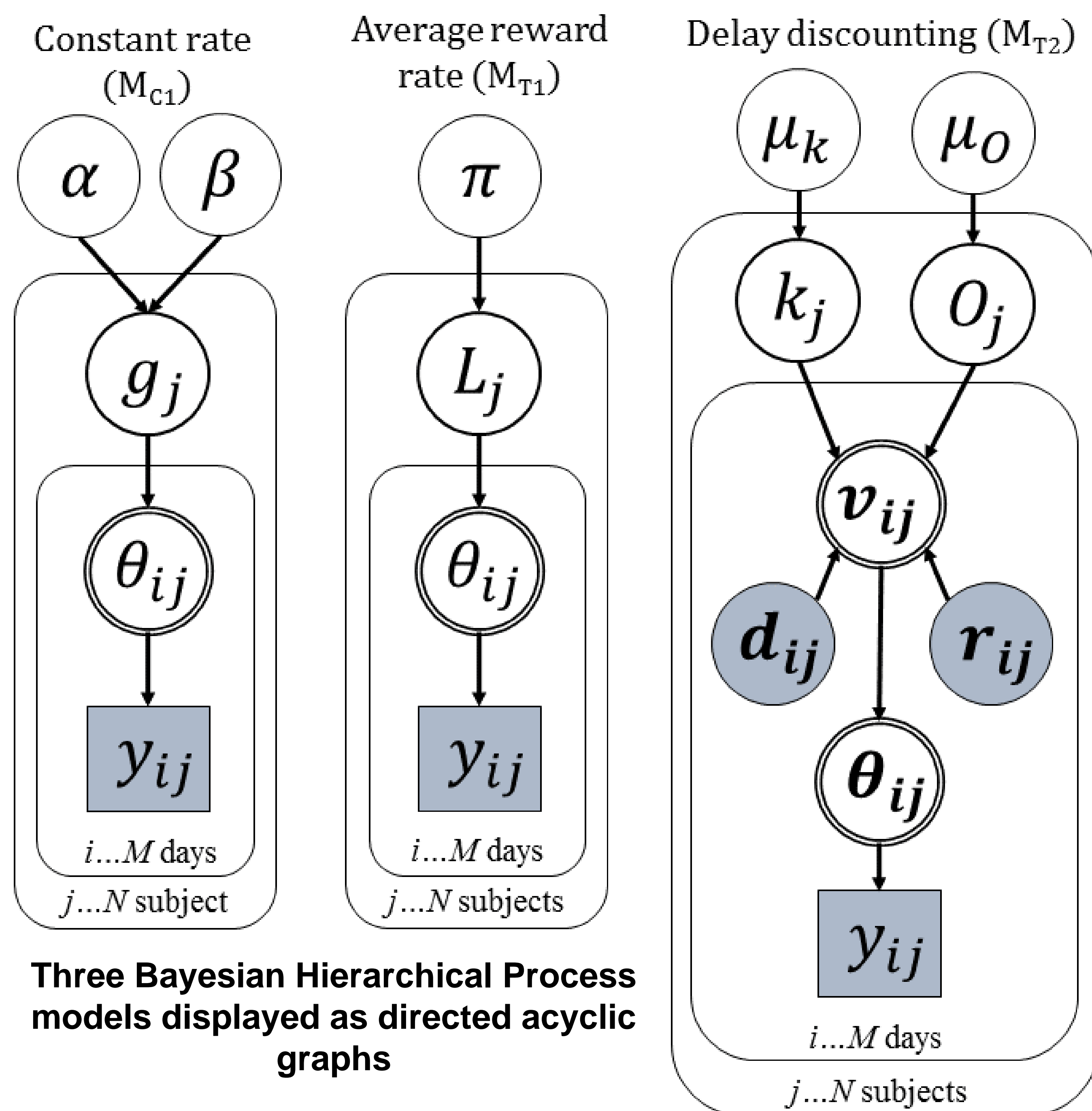
- Thus, research focused on long-term, real-world data collection has a pressing need to address the issue of poor participant engagement.
- The long-term goal of our research program is to meet this need by designing and testing *adaptive interventions* that improve engagement with data collection systems.

## Challenges

- Critically, existing theoretical accounts of when and why participants fail to engage with data collection systems are too vague to guide adaptive interventions.
- Thus, the immediate goal of our research program is to develop detailed computational models of participant engagement that specify exactly *when, how, and on whom* the intervention should act.

## ARL Facilities and Capabilities Available to Support Collaborative Research

- High performance computing cluster
- Existing datasets
- Initial findings:



Prediction performance by model in terms of log10 accumulated prediction error (APE)

## Complementary Expertise / Facilities / Capabilities Sought in Collaboration

- Expertise in decision-making theories
- Cutting-edge modeling expertise
- Support in running long-term real-world studies
- Additional relevant datasets