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Understanding Memory for WHERE using Smartphone Data

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Abstract

A primary challenge for alibi generation research is establishing the ground truth of the real world events of interest. We used a smartphone app to record data on participants for a month prior to a memory test. The app captured their accelerometry continuously and their GPS location and sound environment every ten minutes. After a week retention interval, we asked participants to identify where they were at a given time from among four alternatives. Participants were incorrect 36% of the time. Furthermore, our forced choice procedure allowed us to conduct a conditional logit analysis to assess the relative importance of different aspects of the events to the decision process. We found strong evidence that participants confuse days across weeks. In addition, people often confused weeks in general and also hours across days. Similarity of location induced more errors than similarity of sound environments or movement types.