
Beyond Experience Sampling: Evaluating Personal Informatics with Technology-Assisted Reconstruction

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Abstract

Experience Sampling has been considered the golden standard of in-situ measurement, yet, at the expense of high burden to participants. In this paper we propose Technology-Assisted Reconstruction (TAR), a methodological approach that combines passive logging of users' behaviors with use of these data in assisting the reconstruction of behaviors and experiences. Through a number of recent and ongoing projects we will discuss how TAR may be employed for the evaluation of personal informatics systems, but also, conversely, how ideas from the field of personal informatics may contribute towards the development of new methodologies for in-situ evaluation.

Introduction

The Experience Sampling Method is often referred to as the gold standard for the in-situ evaluation of personal informatics systems as it avoids retrospection biases through sampling experiences and behaviors right at the moment of their occurrence. Users are interrupted throughout the day and asked to respond to a number of questions. But it comes at a cost. It imposes high burden to participants while it may affect the actual experience through repeated interruptions (see [1] for a review of ES studies in the field of HCI).

Reason	No
Disrupts the activity	6
Imposes high burden to participants	3
Requires high effort from researchers	3
Inappropriate for eliciting rich qualitative data	3
Misses rare and brief events	3
The user should be in control of when, what and how often to report	2
Limits sample size	2
Depends on participants' ability to articulate ongoing experience	2
Poses privacy concerns	2
Limits number of measured variables	1
Technology limitations	1

Table 1. Reasons for not selecting the Experience Sampling Method (No of papers) [1].



Figure 4. iScale.nl allows for reflection over long-term use with narrative data [3].

Kahneman et al. [2] proposed the Day Reconstruction Method as a cost-effective alternative to ESM. DRM asks participants to list their daily activities as a continuous list of episodes. This provides a temporal context for reconstruction leading to an increased amount of contextual cues from which experiential information may be inferred. DRM has been found to provide a reasonably good approximation to experience sampling data and the method has been well adopted also in the HCI community.

With this position paper we argue that our field has the capacity to contribute towards a next step in the field of momentary assessment, that of *technology-assisted reconstruction*. This paradigm will combine passive logging of users' behaviors with use of these data in assisting the reconstruction process. We propose that we need to address two core questions: what *types of data* cue episodic memories as well as how *data representation* affects the reconstruction process. Our

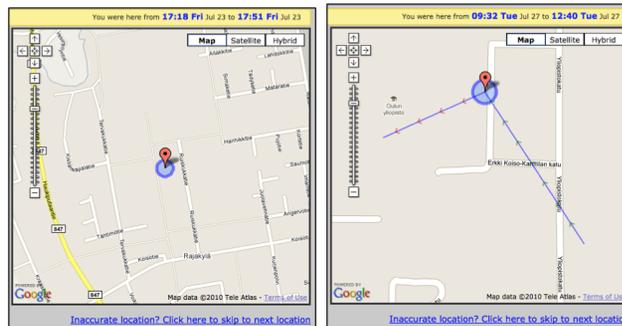


Figure 4. Providing temporal context (locations visited before and after) increases users' consistency in recall [4].

goal is to develop methods that eliminate any form of interruption during participants' whereabouts and daily experiences, while employing psychologically-grounded processes for assisting the reconstruction of their behaviors and experiences.

In our talk we will discuss a number of recent and ongoing projects in technology-assisted reconstruction that study the effect of visual, location, and contextual data on the validity and reliability of emotion. Last, we will reflect on how technology-assisted reconstruction may be employed for the evaluation of personal informatics systems, but also, conversely, how ideas from the field of personal informatics may contribute towards the development of new methodologies for in-situ evaluation.

References

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