2022 Summer School

SmartPsychology:
Methods and Practices in Ambulatory Assessment and Intervention

Home

In recent years, many studies have used ecological momentary assessment (EMA), experience sampling method (ESM), daily diary, or ambulatory assessment to study human behavior and human experiences in their natural context. All these methods consist of repeatedly and often intensively collecting information from individuals about their daily lives in a way that is not possible using traditional designs.
More researchers apply sophisticated EMA designs in their studies thanks to smartphones' generalizability usage and advances in mobile technologies (e.g., wearable devices). These advances opened to new ways of capturing information from people as they go about their everyday lives, including measures of self-report, observational, biological, physiological, and behavioral measures. Moreover, the use of EMA reduces retrospective recall and biases related to self-report information and provides more ecologically valid data. In addition, the data obtained through EMA allows examining within-person processes and temporal dynamics that occur over relatively short time periods (minutes, hours, days).

The summer school program aims at presenting the state of the art methods and practices in ESM designs, providing examples of what can be studied in different domains, pointing to issues to which one should pay attention when building an ESM study, presenting some tools (software/apps) available for experience sampling, as well as exploring the rich range of data that can be gathered with sensory technologies. Specific attention will be devoted to simple and advanced data-analytic techniques that consider and exploit the dynamic nature of experience sampling data.

The summer school is mainly addressed to **doctoral students, postdoctoral scholars,** and **early-career researchers** in general.

Different **interactive didactic methods** will be used:
- Plenary lectures
- Methodological course
- Presentations and discussion about participants' research projects
- Informal Lunch Meetings with experts
- Special Topic lectures

Scientific committee

The school is promoted by the Bicocca Center for Applied Psychology (BiCApP), Department of Psychology, University of Milan-Bicocca

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Lecturers

Laura Bringman (University of Groningen, the Netherlands)
David Ellis (University of Bath, UK)
Timon Elmer (University of Groningen, the Netherlands)
Alessandro Gabbiadini (University of Milano-Bicocca)
Marco Perugini (University of Milano-Bicocca)
Cornelia Wrzus (University of Heidelberg, Germany)

Program

Preliminary program

Arrival: Sunday afternoon/evening
Departure: Friday evening/Saturday morning
Morning session: 9;00-12;30 (with 30 min. break)
Afternoon session: 14;30-18;00 (with 30 min. break)
Late afternoon session: 18:30-19:30

Monday, 4th July

Morning:
9:00 - Opening
G. Costantini, M. Perugini, E. Preti, J. Richetin

9:30 - Design considerations in Ambulatory Assessment
C. Wrzus
In this session, I give an overview of the field of experience sampling methods in different psychological disciplines. The main part focuses on different designs for ESM depending on both theoretical and practical considerations. I will discuss advantages and disadvantages of ESM with different samples and research questions. Also, I will present practical suggestions on questionnaire design, incentivization, participant recruitment and maintenance.

10:30 – Coffee Break

11:00 – Cont. - Design considerations in Ambulatory Assessment

12:30 - Lunch

Afternoon:
14:30 - Hands-on: Design considerations in Ambulatory Assessment
C. Wrzus
In this practical session, participants can develop an ESM design for either example topics or their own research questions. Workshop participants present and discuss their designs within the group. In addition, I will provide smartphones with different questionnaires installed to try out questions and answering formats.

16:00 – Coffee Break

16:30 – 18:00 – Cont. - Hands-on: Design considerations in Ambulatory Assessment

Tuesday, 5ᵗʰ July

Morning:
9:00 - Mobile sensing: Promises and Barriers.
D. Ellis
In this session, I will outline how and why mobile sensing can transform psychological science. Smartphones alone, for example, can provide real-time insights about individuals and their environments. However, the digital age has simultaneously opened a Pandora's box of ethical and computational challenges. By embracing both promises and barriers, we are ideally placed to make impressive contributions within and beyond psychological science.

10:30 – Coffee Break

11:00 – Cont. - Mobile sensing: Promises and Barriers.

12:30 - Lunch

Lunch meeting:
How to publish EMA research in psychology
D. Ellis, C. Wrzus et al.

Afternoon:
14:30 - Design aspects of developing mobile applications for psychology research
A. Gabbiadini
Collecting data through mobile interfaces requires those interfaces to be designed to make it easier for users to answer our research questions. It is also often necessary to integrate data that comes from multiple sources (e.g., biometric data collected with wearable sensors with self-reported data). Therefore, it is of primary importance to design user interfaces(UI) that take these aspects into account, thus fostering good quality data.
The workshop will focus on the basics aspects of User Interface design process, interface prototyping and wireframing and Integration between different data collection systems (API, application programming interface).

16:00 – Coffee Break

16:30-18:00 – Hands on: Design aspects of developing mobile applications for psychology research

Wednesday, 6ᵗʰ July

Morning:
9:00 - Participants' presentations

10:30 – Coffee Break

11:00 - Participants' presentations

13:00 - Lunch

Afternoon:
14:00 - Participants' presentations

16:00 – Coffee Break

16:30 – 17:30 - Participants' presentations

Afternoon Social Event
18:00 – Boat trip to Lake Como

Evening:
19:30 - Social Dinner

Thursday, 7th July

Morning:
9:00 - Data-analytic techniques
T. Elmer
Students will learn how to structure and visualize data collected with ESM techniques and how to analyze signal-contingent ESM data with multilevel models. We will specifically focus on how multilevel models can be used to disentangle within- and between-person variability. There will be a constant switching between conceptual introductions to analytic techniques and hands-on practical sessions with R.

10:30 – Coffee Break

11:00 – Cont. - Data-analytic techniques

12:30 - Lunch

Afternoon:
14:30 - Cont.-Data-analytic techniques

16:00 – Coffee Break

16:30 – 18:00 - Cont.-Data-analytic techniques

Late Afternoon Special Session:
18:30 – 19:30 - Reproducibility in psychological sciences
M. Perugini

Friday, 8th July

Morning:
9:00 - Advanced data-analytic techniques
L. Bringmann
Students will learn how to examine lagged relationships involving ESM variables, including models that assume stationary relationships and models that incorporate relationships that vary over time. In particular, students will learn Vector Autoregressive Models, Multilevel Autoregressive Models, Time-Varying Vector Autoregressive Models, and Multilevel Vector Autoregressive Models. Conceptual introductions will alternate with hands-on practical sessions with R.

10:30 – Coffee Break

11:00 – Cont. - Advanced data-analytic techniques

12:30 - Lunch

Afternoon:
14:30 - Cont.-Advanced data-analytic techniques

16:00 – Coffee Break

16:30 – 18:00 - Cont.-Advanced data-analytic techniques