



Affective Self-Regulation in Day-to-Day Life: Applying Mobile Technology as a Research Instrument

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Purposes

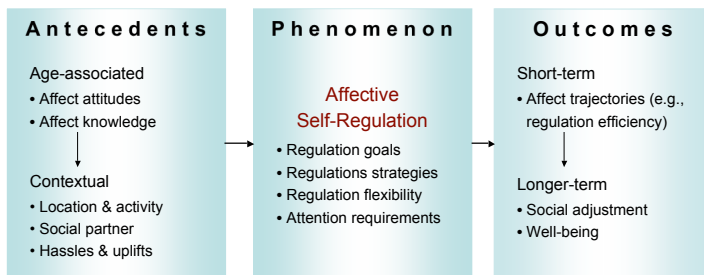
1. **Development** of a technology that makes micro-longitudinal components feasible in heterogeneous samples (e.g., large-scale household panels)

Requirements:

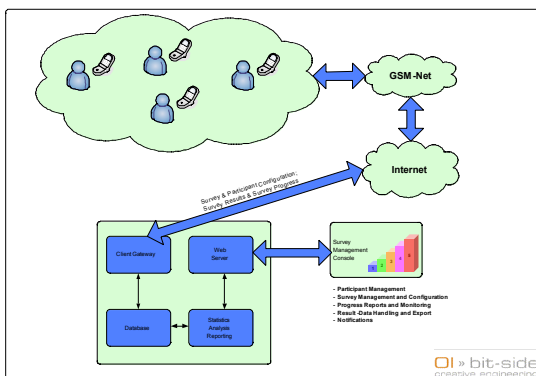
- **Manageability** in large and widely distributed samples (i.e., mobility, management facilities for data collection and storage)
- **Flexibility** (i.e., easy study setup, accommodation of various item and task formats, implementation of complex assessment schedules)
- **Ecological validity**

2. **First application** of technology in a study on the development of day-to-day affective self-regulation

Working Model



Technology Development: Experience Sampling with Mobile Phones



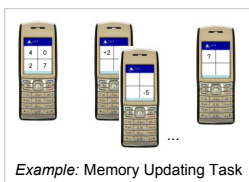
- **Java-client** on mobile phones
 - Control of assessment schedule
 - Display of items and tasks
 - Input of responses
 - Immediate data upload to server

Server

- Data storage
- Web interface
 - Study setup and modification
 - Display of individualized assessment schedules
 - Visualization of response compliance

Possible extensions

- Porting to many different cell phones (i.e., use of participants' own phones as study devices)
- Event-contingent ("interactive") experience sampling
 - Example: Response in one person triggers measurement in another person (e.g., investigation of emotion knowledge)



Example: Memory Updating Task

Study in Progress:

Day-to-Day Affective Self-Regulation Across the Lifespan

Background

- Affective self-regulation: Ability to influence **which** affective states to have, **when** to have them, and how to **experience** and **express** them (e.g., Gross, 1999).
- Affect regulation competence may improve throughout adulthood (e.g., Gross et al., 1997, Lawton et al., 1993; but see Kunzmann et al., 2005).
- Little evidence on age-related changes in affective self-regulation as it occurs in people's day-to-day lives and natural environments (but see Carstensen et al., 2000).

→ **This study:** How do **phenomenology**, **effectiveness**, and **attentional requirements** of day-to-day affective self-regulation develop from adolescence to older adulthood?

Central Predictions

- Deliberate affective self-regulation varies **within** persons. It is more likely **(a)** when affect intensity is high, **(b)** in the presence of strangers or not-so-close persons, and **(c)** when public self-awareness is high.
- The majority of affect-regulation attempts follow the hedonic principle. **Exceptions** may be more likely for some affects than for others (e.g., down-regulation of pride versus interest). Adolescents may be most likely, and older adults, least likely to show exceptions to the hedonic principle (e.g., to dwell on negative affects).
- The more **flexibly** individuals tailor affect-regulatory attempts to situational demands, the more effective they are, on the average, in regulating their affect, and the better is their social adjustment.
- Affect regulation **effectiveness** increases from adolescence to older adulthood. This is not not only due to differences in exposure to affect-eliciting events, but also to differences in affect attitudes, affect knowledge, and affect-regulation flexibility.
- **Attentional** demands of affect-regulatory attempts are stronger the more intense the to-be-regulated affect is, and increase with age from adolescence to older adulthood.

Method

- $N = 360$; age range = 14 to 75+ years, stratified by age, gender, education
- T1 (Questionnaires) → Experience Sampling → T2 (Questionnaires)
- 54 experience samples
- 3 x 3 days, 6 daily assessments, additional days when missings
- Assessment of momentary context, hassles and uplifts, affect, regulation goals and strategies, and numerical memory updating

Planned Extension

- Combination with ambulatory psychophysiological monitoring in daily life (Co-PI: Viktor Müller)
- Assessment of:
 - Physical activity (accelerometry)
 - Respiration
 - Cardiovascular activation (e.g., additional heart rate, vagal tone)

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This research is part of the project **Developmental Regulation of Affect, Motivation and Abilities (DRAMA)**; scientific investigators: **Michaela Riediger, Sabine Schaefer, & Ulman Lindenberger**; predoctoral fellow: **Antje Rauters**. DRAMA investigates lifespan changes in the regulation of goals and preferences. This includes the pursuit and coordination of personal goals, the use of shared knowledge in the goal-directed behavior of couples, and the implications of lifespan changes in cognitive resources on schema reliance and task selection. To strike a balance between external and internal validity and to assess both intentional and implicit facets of self-regulation, the project uses a variety of empirical methods, ranging from laboratory experiments over self- and peer reports to microlongitudinal studies embedded into participants' everyday lives.