



# Teaching and Learning Guide for: Eavesdropping on Health: A Naturalistic Observation Approach to Social Health Research

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This guide accompanies the following article: Matthias R. Mehl, Eavesdropping on Health: A Naturalistic Observation Approach to Social Health Research, *Social and Personality Psychology Compass* 1/1 (2007): 359–380, 10.1111/j.1751-9004.2007.00034.x

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## Author's Introduction

Over the last years, health psychology has amounted impressive evidence that social factors play a critical role in primary and tertiary prevention. However, compared with other fields, it has somewhat lagged behind in implementing methodological advances that can considerably improve the sophistication of the assessment of such social factors. In essence, this article seeks to motivate readers to think beyond global and retrospective self-reports in health research and points them to unique potentials that ecological momentary assessment (EMA) methods (also often referred to as experience sampling, diary, or ambulatory assessment methods) offer. In particular, the article reviews one specific and still relatively novel observational ecological momentary assessment method, the Electronically Activated Recorder or EAR.

## Author Recommends

### *State-of-the-Science Reviews of Real-World Assessment Methods*

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, **54**, 579–616 (DOI: 10.1146/annurev.psych.54.101601.145030).

This is a classic and highly cited review of real-world assessment methods. It captures important aspects of diary study technology, design, and data analysis.

Conner, T. S., Tennen, H., Fleeson, W., & Feldman Barrett, L. (2009). Experience sampling methods: A modern idiographic approach to personality research. *Social and Personality Psychology Compass*, **3**, 1–22 (DOI: 10.1111/j.1751-9004.2009.00170.x).

This recent and up-to-date review of experience sampling methods focuses on how these methods can enrich personality research. It includes a helpful primer on practical issues around conducting experience sampling studies.

Ebner-Priemer, U. W., & Kubiak, T. (2007). Psychological and psychophysiological ambulatory monitoring – A review of hardware and software solutions. *European Journal of Psychological Assessment*, **23**, 214–226 (DOI: 10.1027/1015-5759.23.4.214).

This is a review of hardware and software that are available to researchers who are conducting field studies using ambulatory assessment methods. It is an extremely valuable resource for getting started with using these methods. Naturally, some of the information provided about specific technologies will be outdated with time.

Fahrenberg, J., Myrtek, M., Pawlik, K., & Perrez, M. (2007). Ambulatory assessment—monitoring behavior in daily life settings: A behavioral-scientific challenge for psychology. *European Journal of Psychological Assessment*, **23**, 206–213 (DOI: 10.1027/1015-5759.23.4.206).

This is a recent and important review of ambulatory assessment methods. It was written by a group of European researchers who were instrumental in establishing these methods and who have been spearheading their use.

Stone, A. A., Shiffman, S. S., Atienza, A., & Nebeling, L. (Eds.). (2007). *The Science of Real-Time Data Capture: Self-Reports in Health Research*. New York: Oxford University Press.

This book provides a broad review of the conceptual foundations and empirical applications of ecological momentary assessment methods in health research.

#### *Empirical Articles Speaking to the Value of Real-World Assessment Methods:*

Conner, T. S., Tennen, H., Zautra, A. J., Affleck, G., Armeli, S., & Fifield, J. (2006). Coping with rheumatoid arthritis pain in daily life: Within-person analyses reveal hidden vulnerability for the formerly depressed. *Pain*, **126**, 198–209 (DOI: 10.1016/j.pain.2006.06.033).

This study used daily diaries to examine the association between patients' history of depression and their daily coping with rheumatoid arthritis (RA) pain. It found that although previously depressed participants did not differ from their never depressed peers on measures of average pain, the daily diaries uniquely revealed a hidden vulnerability in how they managed their pain.

Mehl, M. R., Vazire, S., Ramirez-Esparza, N., Slatcher, R. B., & Pennebaker, J. W. (2007). Are women really more talkative than men? *Science*, **317**, 82 (DOI: 10.1126/science.1139940).

This study used the EAR method to dispel the myth that women are by a factor more talkative than men. The analyses showed that both sexes use about 16,000 words per day. The estimated gender difference of 546 words was impressively small compared with a range of over 46,000 words between the least and most talkative individual. The number of words spoken per day is a powerful metric for measuring talkativeness and requires observational, real-world assessments.

Smyth, J., Wonderlich, S., Heron, K., Sliwinski, M., Crosby, R., Mitchell, J., & Engel, S. (2007). Daily and momentary mood and stress predict binge eating and vomiting in bulimia nervosa patients in the natural environment. *Journal of Consulting and Clinical Psychology*, **75**, 629–638 (DOI: 10.1037/0022-006X.75.4.629).

This study used ecological momentary assessments to identify how psychological factors are related to binge eating and vomiting in the daily lives of bulimia nervosa patients. In laying out a temporal sequence of affect, stress, and bulimia-events, it critically informs the theory and clinical practice of eating disorders.

#### **Online Materials:**

<http://www.ambulatory-assessment.org/>

This is a link to the official website of the Society for Ambulatory Assessment (SAA). The SAA was founded in 2008 as an international and interdisciplinary organization with the goal of promoting research in everyday life by bringing together scientists who use or are interested in real-world assessment. The website contains a host of information and should be an extremely valuable resource for learning about ambulatory assessment methods. For example, it shows dates of upcoming conferences, hosts reviews of pertinent literature, and links to websites of commercial and noncommercial providers of hardware and software solutions.

<http://dingo.sbs.arizona.edu/~mehl/EAR.htm>

This link to my academic website provides more information about the EAR method. The website also contains pictures that illustrate how the device looks when worn by a person as well as some sample sounds of EAR recordings.

### **Sample Syllabus:**

#### *Semester-long Seminar on Real-Time Data Capture in the Health Sciences*

The article could be used in the context of a semester-long seminar on real-time data capture methods in the health sciences. For this, I recommend using Stone, Shiffman, Atienza, and Nebeling (2007) as text book and supplementing the book with selected readings (see above). The seminar could be organized using the following structure:

- (I) Ecological Momentary Assessment: History, Background, and Rationale
- (II) Overview of Existing EMA Methods
- (III) Considerations for Designing an EMA study
- (IV) Considerations for Analyzing EMA Data
- (V) Examples of EMA Research
- (VI) Future Directions for the Field of Ecological Momentary Assessment

The article could be used to stimulate a discussion on the potentials and limitations of self-report based, observational, and physiological EMA methods (Section II).

#### *Covering Real-Time Data Capture within a Seminar on Health Psychology*

The article could also be used as part of a block on real-time data capture within a broader seminar on health psychology. In this case, I recommend dedicating two sessions to the topic. The first session would provide the background and rationale for using EMA methods in health psychology. The second session would provide exemplars of EMA-based health research.

Suggested readings for the first session:

- Bolger et al. (2003; see above)
- Fahrenberg et al. (2007; see above)
- Chapters by N. Schwarz and S. Shiffman in Stone et al. (2007; see above)

Suggested readings for the second session:

- Conner et al. (2006; see above)
- Mehl et al. (2007; see above)
- Smyth et al. (2007; see above)

### **Focus Questions**

- (1) In what ways can the field's long-standing reliance on global and retrospective self-report questionnaires limit our understanding of the role that social factors play in health and disease?
- (2) What are unique challenges that researchers interested in real-world assessment methods face and how can they be resolved?
- (3) What ethical questions does the use of unobtrusive measures in research raise and how can they be addressed?
- (4) How can arbitrary metrics, that is measures that are not based on intuitively interpretable and inherently meaningful and relevant measurement units, be problematic for the field of (health) psychology?
- (5) What roles do directly illness-focused (e.g., disclosure and support) versus mundane, everyday interactions play in coping with and adjusting to upheavals?