

Research Methods for Mobile Messaging



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Overview

Motivations & focus

Methods & examples

- Diary studies
- Wizard-of-Oz techniques
- Field experiments

Enabling technologies



Focus Research

Design-oriented research

Informing application-specific decisions
Finding needs, evaluating solutions

and/or

Scientific research

Creating generalizable knowledge
Motivated by phenomena and theory



Focus

Mobile Messaging

About **mobile messaging**
and using **mobile messaging**

and/or

About **something else**
but using **mobile messaging**



About something else, but using mobile messaging

Shopping

Information needs and communication in shopping decisions

Self-disclosure

Factors that influence self-disclosure

Influence strategies

Comparing different strategies and implementations

Media consumption

Desires for finding photo media

Health



About mobile messaging interactions

This research area has implications for using mobile messaging for research and interventions in other domains.

Some research questions

- What factors influence **compliance** in surveys administered via mobile messaging?
- What **new diary methods** are enabled by mobile messaging technology (e.g. two-step diary methods, event detection)?
- How do people orient to **proximal and distal sources** of messages (e.g. their own mobile phone, the human or computer sender)?



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Diary methods

Participants record events **as they happen, or shortly after**

Designed to **reduce revision in retrospection, forgetting events**

Widely used in human-computer interaction research and product development, as well as e.g. psychology and medicine

Taxonomy: What triggers entries? (Wheeler & Reis 1991)

- **Interval**-contingent
- **Signal**-contingent
- **Event**-contingent

Burden on participants, sometimes in demanding contexts



Diary studies with mobile messaging

4I8r with snippets technique (Brandt, Weiss, & Klemmer 2007)

Participants (1) capture text, MMS, or voice snippets

(2) annotate snippets later the same day on the Web



Example: Information and communication needs in shopping

Entries coded and analyzed by researcher

Entries used to ground interviews with a subset of participants



Wizard-of-Oz techniques

Wizard-of-Oz techniques

A **human “wizard”** simulates functions of the computer

Widely used for prototyping recognition- and AI-based interactions

With post-use interviews

Can use logs of interaction to ground interviews



Mobile messaging studies using wizards

Suited to mobile messaging, e.g.

Easy for wizards to interact

Participants use their own devices

Example: Photo-consumption study

Needfinding for photo browsing and search

Participants could make unbounded requests for photos

WOZ prototype provided **realistic motivations** for requests

Wizards reviewed request on the Web, **responses sent via MMS**



Field experiments with text messaging

Manipulate features of mobile messaging interactions experimentally
Can range from product-optimizing “A-B testing for text messages” to scientific experiments testing theory

Example: Self-disclosure and influence strategies (Eckles et al. 2007)

2 (sender: computer or human) x 3 (influence strategy) design

Deception about **humanity of sender** is possible

Participants signed up on a Web-based form

Received text messages with questions of increasing intimacy

Analyzed breadth (length) of disclosures



Enabling technologies

Sending and receiving messages

Web server running PHP & MySQL

NowSMS

GSM modem

Other software

4l8r service

PhotoFinder prototype

Participants' mobile phones



Contributors

Diary studies

Nokia Research Center, Palo Alto: Yan Xu, Mirjana Spasojevic

Stanford University: Joel Brandt, Scott Klemmer

Wizard-of-Oz techniques

Yahoo! Research Berkeley: Shane Ahern, Simon King, Mor Naaman

Field experiments

Stanford University: Douglas Wightman, Claire Carlson, Attapol

Thamrongrattanarit, Marcello Bastea-Forte, BJ Fogg, Leila Takayama,
Clifford Nass



References

- Brandt, J., Weiss, N., & Klemmer, S. R. (2007). **txt 4 l8r: lowering the burden for diary studies under mobile conditions.** *Proc. CHI '07 Extended Abstracts.*
- Eckles, D., Wightman, D., Carlson, C., Thamrongrattanarit, A., Bastea-Forte, M., & Fogg, B.J. **Self-disclosure via mobile messaging: influence strategies and social responses to communication technologies.** *Adjunct Proc. Ubicomp 2007.*
- Wheeler, L., & Reis, H. (1991). **Self-recording of everyday life events: origins, types, and uses.** *Journal of personality, 59(3).*



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