



Studying Antecedents of Emotional Experiences in Interactive Contexts

Sascha Mahlke & Manfred Thüring
Berlin University of Technology



Beyond usability – user experience research

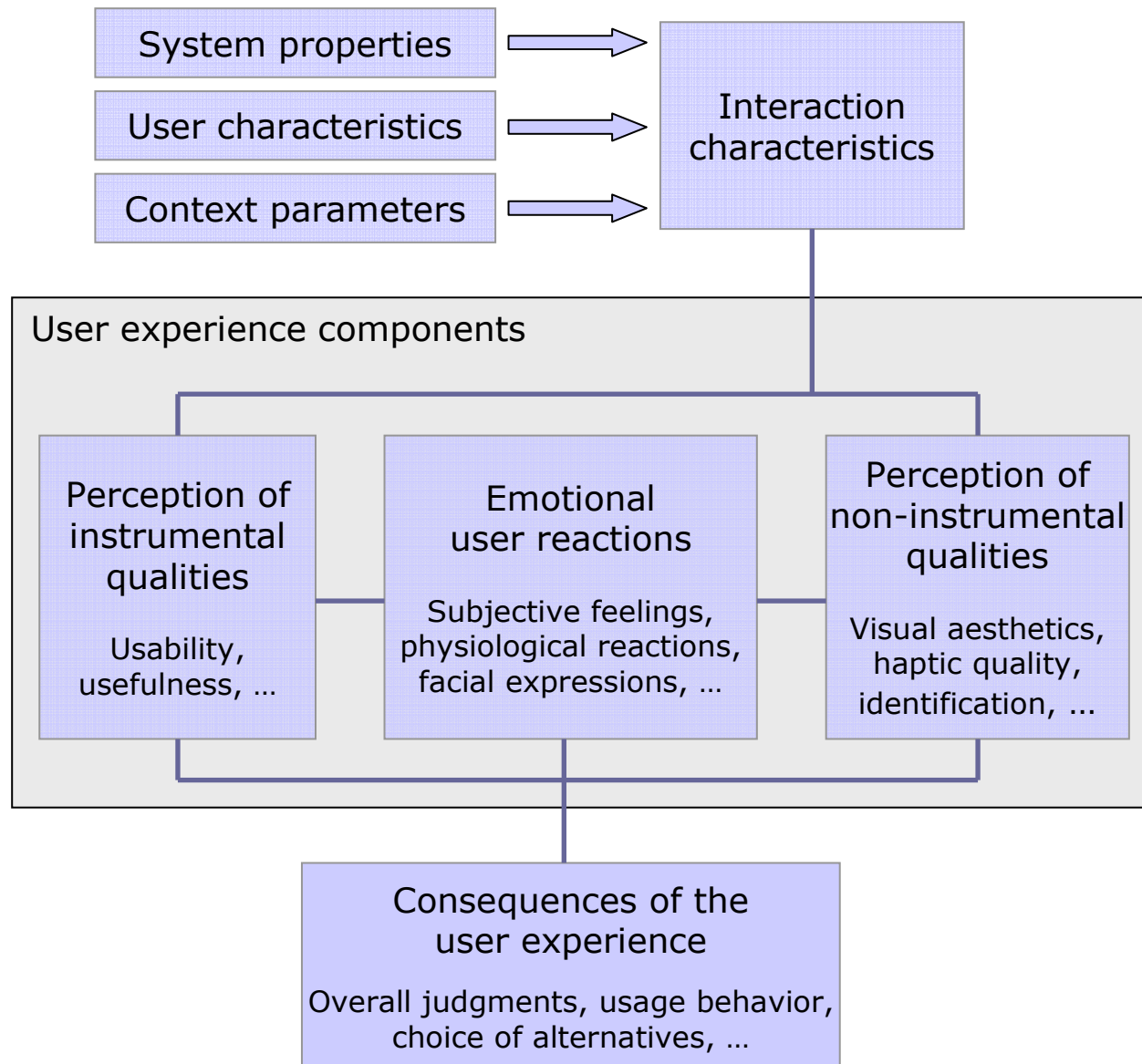
- Blythe et al. (2006) – Approaches to the user experience
 - Based on a pragmatist or phenomenological perspective (Forlizzi & Ford, Davis, McCarthy & Wright, ...)
 - Inspired by cognitive science (Jordan, Hassenzahl, Norman, ...)
- Hassenzahl & Tractinsky (2006) – Threads of research
 - Beyond the instrumental (aesthetics, hedonics, ...)
 - Emotions and affect
 - The experiential (temporality & situatedness)



Value of this work

- Formulating a framework that integrates non-instrumental qualities and emotional aspects of the user experience next to traditional concepts
- Offering a basis for experimental studies of user experience research questions
- Demonstrating how to take an experimental approach to learn more about user experience processes

Components of the User Experience



Components of the User Experience



How does such a framework support an **experimental** approach to UX research?

- Influencing factors that can be varied
- Differentiation of components that can be measured
- Hypotheses about interrelations of the defined variables

Experimental Study



Purpose of the study

- Demonstrating the application of the framework and
- Testing some of the hypothesized relations
 - System properties influence quality perceptions independently
 - Quality perceptions have an impact on emotional user reactions
 - Overall judgments depend on quality perceptions and emotional user reactions

Experimental Study



Method

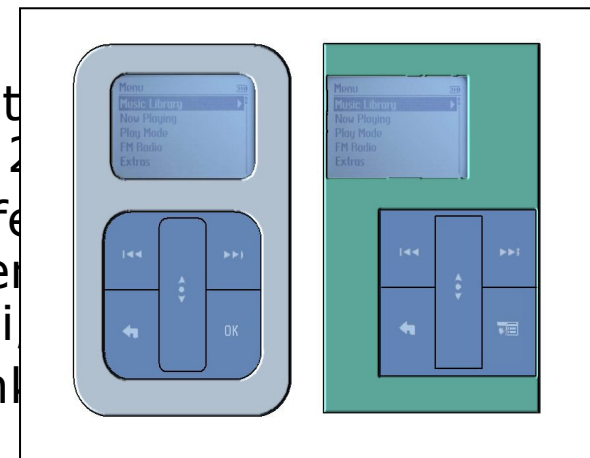
- 48 participants
- Independent variables (system properties)
 - Variation of usability and
 - visual aesthetics of a portable audio player prototype
- Dependent variables
 - Quality perceptions: perceived usability (Kirakowski, 1996), visual aesthetics (Lavie & Tractinsky, 2004)
 - Emotional user reactions: subjective feelings (Lang, 1980), physiological reactions (heart rate, dermal activity), facial expression (corrugator supercilii, zygomaticus major)
 - Overall judgments: overall rating, ranking

Experimental Study



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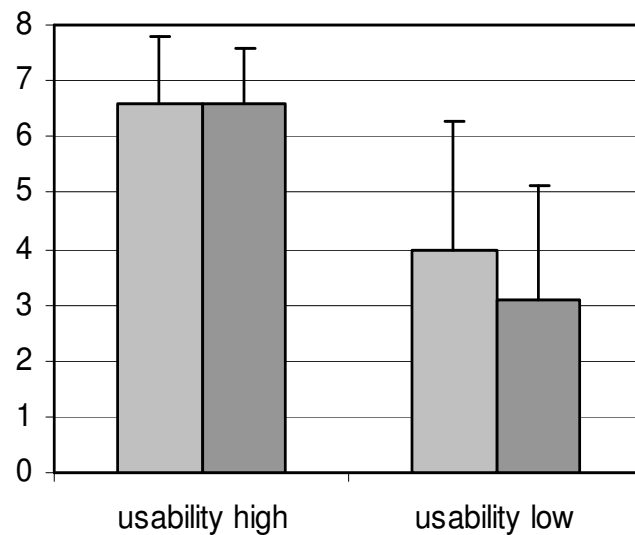


Experimental Study

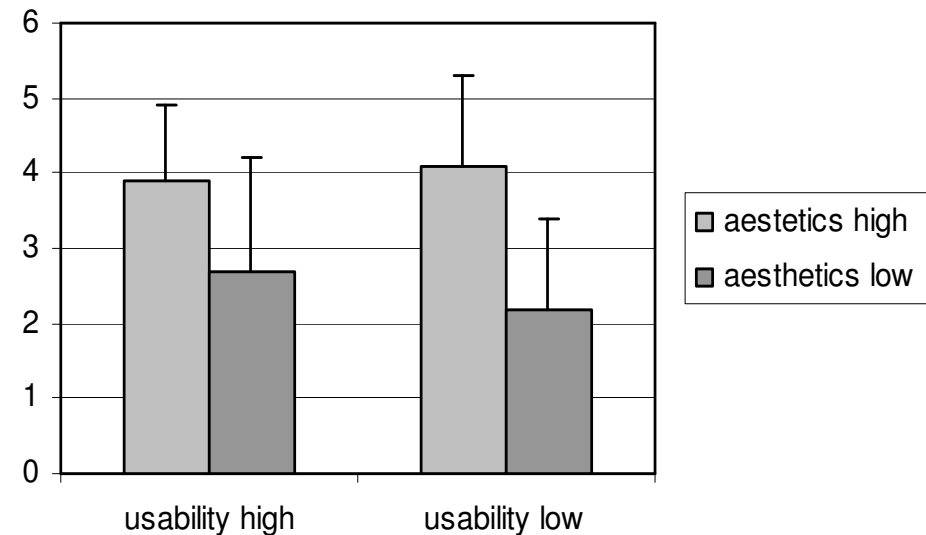


Results – Quality perceptions

Perceived Usability



Perceived Visual Aesthetics

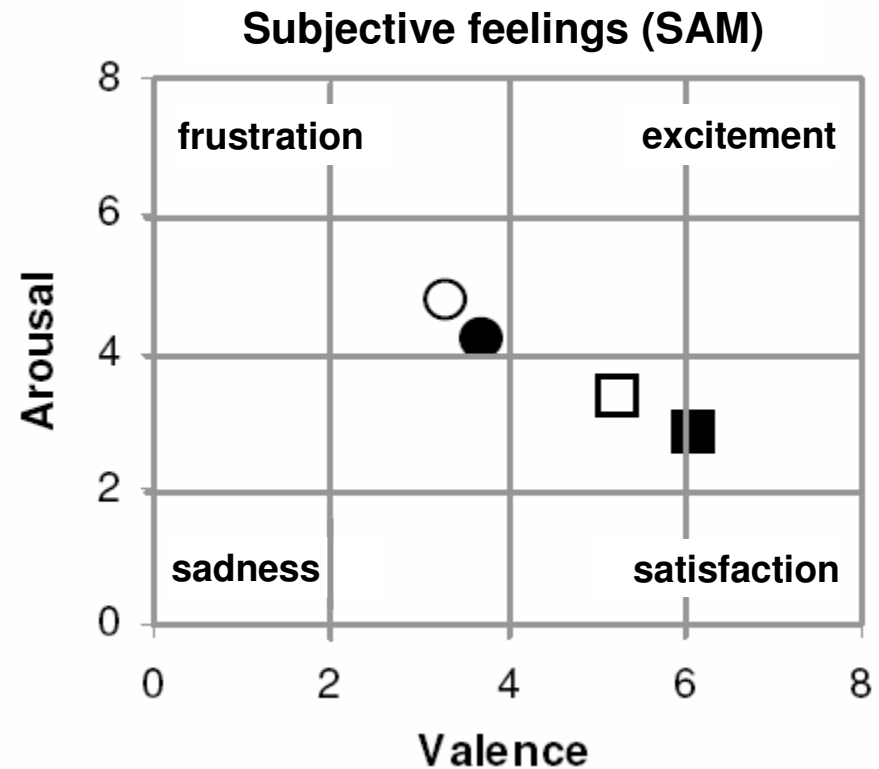


Experimental Study



Results – Subjective feelings

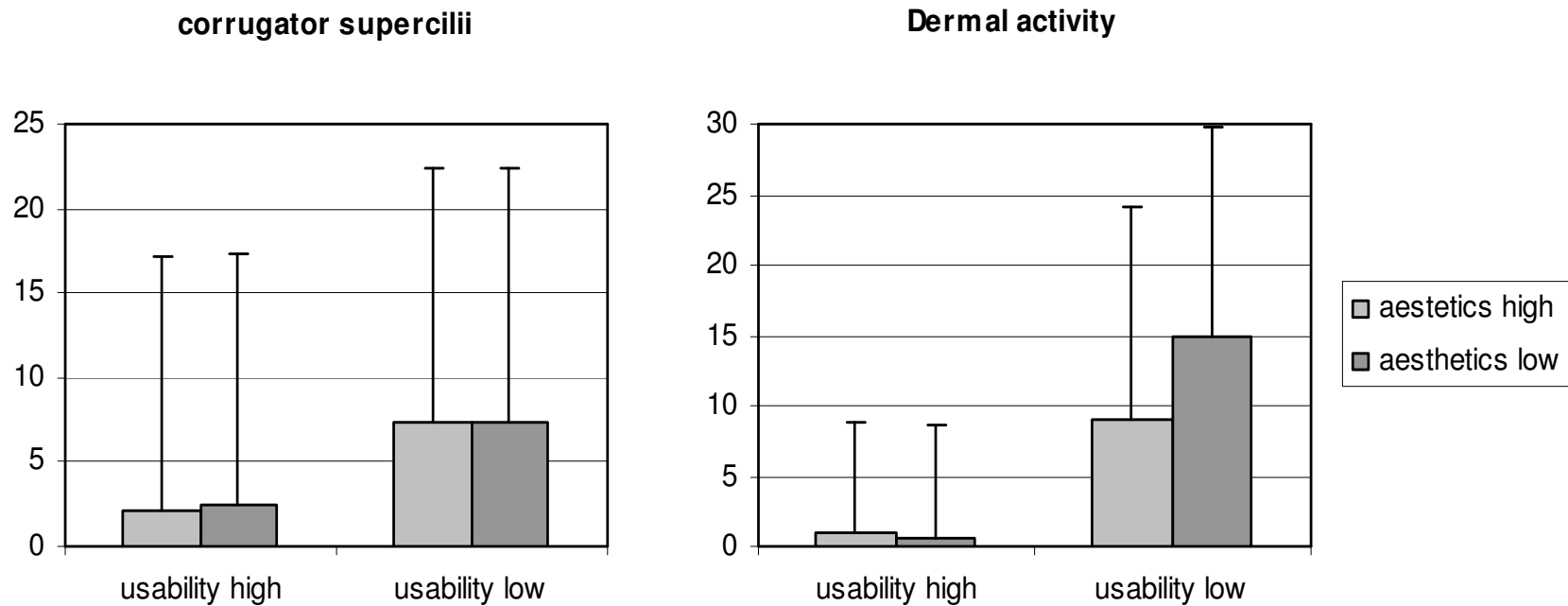
- usability low / aesthetics low
- usability low / aesthetics high
- usability high / aesthetics low
- usability high / aesthetics high



Experimental Study



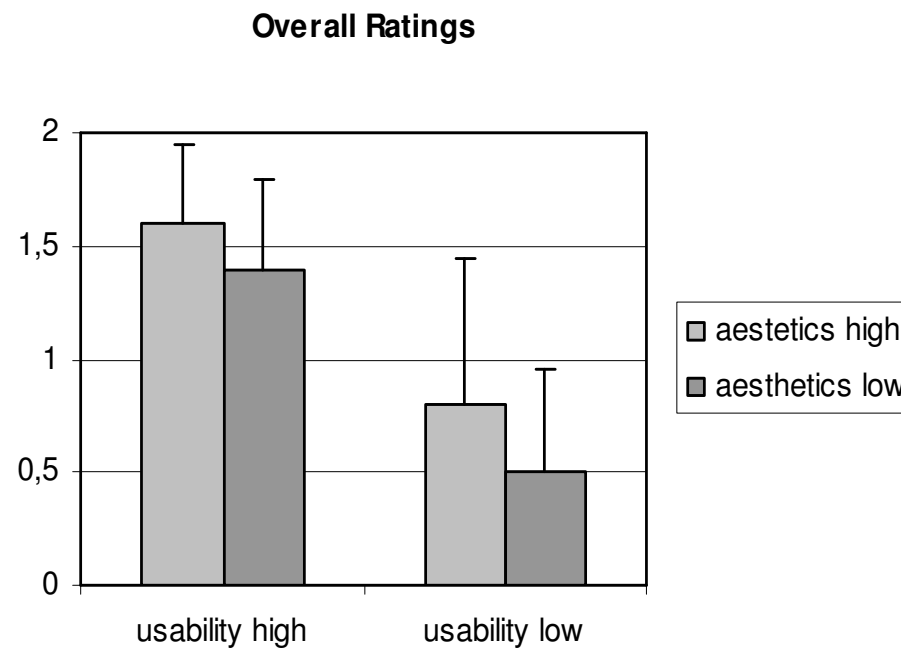
Results – Facial expressions and physiological reactions



Experimental Study



Results – Overall judgments





Conclusions

- Instrumental and non-instrumental quality perceptions do not have to influence each other (Tractinsky et al., 2000; Ben-Bassat et al., 2006)
- Additive effect: emotional user reactions vary depending on instrumental and non-instrumental qualities (as the same is true for overall judgments)
- The impact of instrumental qualities is higher: physiological reactions and facial expressions only showed an effect of the usability variation

Future Work



- Influence of context parameters and user characteristics
 - Variation of task completion vs. exploration (Mahlke & Lindgaard, 2007)
- Variation of other system properties
 - Properties of haptic controls, ...
- Antecedents of excitement and joy
- Temporality

Summary



- A framework that integrates instrumental and non-instrumental qualities as well as emotional user reactions to support experimental studies of the user experience
- A study that demonstrated its application and showed some empirical results about the relations of system properties, quality perceptions, emotional user reactions and overall judgments

Sascha Mahlke

Berlin University of Technology

sascha.mahlke@zmms.tu-berlin.de

www.zmms.tu-berlin.de/~sma