UX Research: What Theoretical Roots Do We Build On – If Any?

Abstract
User Experience (UX) research focusing on the emotional and experiential aspects of system usage is of highly recognized relevance for the CHI community. A lot of work has been conducted with different goals: investigating a common definition and understanding of UX, creating appropriate concepts, frameworks and models for supporting design and development processes, and developing methods and techniques for evaluating UX. However, there is still a lack of in-depth discussions on the theoretical roots and foundations for all of these UX activities in academia and industry. In this SIG we will explore the state of the art in the theory of UX research in order to lay the fundament for further advancements of the UX field. We will also discuss how the theoretical viewpoints can benefit, and be influenced by the UX practitioners’ work.

Keywords
User Experience, Theory, Experience Design

ACM Classification Keywords
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms
Theory, User Experience
**Introduction and Motivation**

Theoretical discussions and finding theoretical roots for UX research seem to lag behind or even remain stagnant compared to the relatively rich discussions about technological, methodological, and design issues on UX. Recently it has been questioned how such endeavors can sustain without being founded by strong theoretical argumentations (instigated e.g., by [12][11]). There is an urgent need to give high priority to this crucial question and to explore it deeply within the UX community. Recent publications by Kuutti [8] and Luojus [7] underline this research effort. Specifically, Kuutti argues that there is a need for more researchers starting to speculate and experiment with models and theories for user experience. This SIG session aims to stimulate this crucial discussion in CHI.

**Taking Time for In-depth Discussion**

Past theories and methods in HCI are limited in their potential to analyze and explain the increasing penetration of interactive and digital technologies in people’s daily lives. In particular, the shift from pure usability research towards UX research has become obvious and increasingly recognized within the HCI field. Thus, contemporary trends in HCI focus on UX and experience-centered design (e.g., [6][5][13]). No longer are only pragmatic qualities considered as relevant in the design of technologies; also hedonic qualities are considered central. A more profound basis for the relationship between human and computer or technology-based artefacts is needed [10]. Wright and McCarthy [13] argue, for instance, for a humanistic approach in designing digital technologies that enhance the UX.

**Goals of the SIG and Topics to Discuss**

The central goal of this SIG is to explore the state of the art in the theory of UX in order to lay the fundament for further evolvement of the UX field. We recognize the previous attempts at CHI, e.g., Blythe et al. 2006 [1], Blythe et al. 2010 [2], Forlizzi 2010 [4] and aim at initiating this theory discussion with a broader CHI audience in a SIG format. We will also ignite discussions on how the theoretical viewpoints can benefit and be influenced by the UX practitioners’ work (see also [3]).

The SIG will in particular address the following topics:

- Reviewing the theoretically oriented research on UX so far, including existing theoretical approaches, frameworks and concepts embraced in HCI in general (e.g., activity theory, situated cognition, social ecology theory) and UX in particular (e.g., psychological theories on affect and emotion).
- Discussing whether the content of current UX research has enough coherence with those humanities where it has been studied, so that a theoretical connection can be established.
- Identifying potential theories of UX, rooting from a range of tributary disciplines of HCI (e.g., consumer psychology, linguistics, neuropsychology, critical literary, etc.).
- Discussing the integration of scattered research efforts to drive the further policies and strategies on theoretical UX research.
- Exploring the viewpoints and requirements for how the theoretical models and principles can be linked to practical tasks of UX design and evaluation.
**SIG Audience**

One of the goals of this SIG is to identify and bring together people investigating UX from different theoretical backgrounds, for example: cognitivists, phenomenologists, activity theorists, pragmatists, design researchers, practitioners, etc. We hope for further collaboration with these people when clarifying the potential theoretical roots for UX.

The audience would be approximately 30-50 participants from both academia and industry interested in a deeper understanding of UX, especially in the theoretical pillars of UX research and its potential for future evolvement in HCI and experience-centered design activities.

**SIG Activities and Organization**

The SIG will be a facilitated discussion session, guided by the detailed activity plan described below:

- Introduction of the SIG background and goals of the SIG (10 minutes).

- Lively presentation by the organizers of issues in the various fields related to the topic of the SIG, in particular the presentation of the relevance of a theoretical foundation for UX research (e.g., reaching a more in-depth understanding and common ground for future research activities in the CHI community) (20 minutes).

- Group brainstorming sessions. The organizers will prepare material (i.e., existing UX frameworks, models, concepts, theoretical attempts for UX) with which participants can describe their theoretical perspective to UX (20 minutes).

- The highlights, specific directions and challenges identified in a short group brainstorming will be discussed in the plenary to advance UX research from a theoretical viewpoint (30 minutes).

- Wrap up of the SIG results and creation of future plans, in particular on joint actions on this topic; creation of an attendance list for organizing further discussions and distributing the results from the interactive session (10 minutes).

The organizers have extensive experience in organizing interactive discussions, such as workshops, panels and SIGs at CHI 2007, CHI 2008, EuroITV2008, CHI 2009, Interact 2009, NordiCHI2010, as well as in master and PhD level courses on HCI and UX.

**Example citations**


Supplementary material

Relevant Communities
The SIG is of interest for the User Experience Community in particular, but will also be interesting for the other three Communities (Design, Engineering, and Management), as user experience research challenges all communities in their activities.

For the User Experience Community this SIG is relevant due to the fact that several activities on UX definitions, modeling and methods for design and evaluation purposes are ongoing without a theoretical basis. The fundamentals that ensure the future evolutions of this field are still insufficiently discussed.

Target Audience
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Schedule
The SIG will be organized and presented using the following interactive techniques:

- The organizers will prepare material for the group brainstorming session at the SIG, in particular cards with a short description of the existing UX frameworks, models, concepts, theoretical attempts for UX will be prepared to engage participants in the discussion and description of their theoretical perspectives to UX. The material will further be used in the plenary discussion.

- During the SIG, the organizers will coordinate the group discussion and moderate the activities during the group and plenary activities.

- After the SIG, the organizers will distribute the results of the SIG, in particular of the interactive part, and distribute it to all participants who left their contact details. We will also intend to continue this discussion in a workshop, in Interact 2011 and/or in CHI 2012.

See detailed schedule of the SIG session in the extended abstract (combining an introduction from the organizers, with group and plenary discussion sessions and a wrap up session to align future joint activities with the SIG participants).
Discussion Topics
The SIG will address the following topics:

• Reviewing the theoretically oriented research on UX so far, including existing theoretical approaches, frameworks and concepts embraced in HCI in general (e.g., activity theory, situated cognition, social ecology theory) and UX in particular (e.g., psychological theories on affect and emotion).

• Discussing whether the content of current UX research has enough coherence with those humanities where it has been studied, so that a theoretical connection can be established.

• Identifying potential theories of UX, rooting from a range of tributary disciplines of HCI (e.g., consumer psychology, linguistics, neuropsychology, critical literary, etc.).

• Discussing the integration of scattered research efforts to drive the further policies and strategies on theoretical UX research.

• Exploring the viewpoints and requirements for how the theoretical models and principles can be linked to practical tasks of UX design and evaluation.

SIG Organizers
Marianna Obrist is Assistant Professor for HCI & Usability at the ICT&S Center of the University of Salzburg. The focal point of her research is on user experience studies, methods and measures. Marianna was involved in several research projects concerned with the study of user experience in different contexts and situations (e.g., home, mobile, games). She was involved in the organization of diverse workshops, SIGs at CHI and other HCI-related conferences (e.g., NordiCHI, MobileHCI, EuroITV).

Effie Lai-Chong Law is a Lecturer at the Department of Computer Science at the University of Leicester (UK) and a visiting Senior Research Scientist of ETH Zürich (Switzerland). She obtained her PhD in psychology from the University of Munich, Germany. Her main research interest is usability and user experience design and evaluation methodologies. She has chaired two COST Actions: MAUSE “Towards the Maturation of Usability Evaluation” and TwinTide “Towards the Integration of Trans-sectorial IT Design and Evaluation” in which HCI experts from more than 20 European countries have been involved. Besides, she has played a leading role in several international and national research projects such as 80days (adaptive digital educational games), ROLE (responsive open learning environment), iCamp (CSCW) and EFFUSE (HCI in medicine).

Kaisa Väänänen-Vainio-Mattila is a full professor of usability and user experience in Tampere University of Technology, where she leads the unit of Human-Centered Technology. Kaisa has about 20 years of experience in usability, HCI and UX both in academia and industry - including 10+ years in Nokia Inc. Her research focuses on user experience design and evaluation, with the focus on mobile and ubiquitous services. Currently she is also a part-time visiting professor at Mobile Life Centre @ Stockholm University, where she is investigating UX of embodied interaction in multi-device environments.

Virpi Roto is a university researcher with the University of Helsinki. She has 15 years of experience
on usability and user experience work in Nokia Research Center. Her mission has been to find more systematic ways to work on user experience in industry, so she has been running several workshops, SIGs, panels, and seminars on UX definition and evaluation e.g. in CHI conferences.

Arnold Vermeeren is assistant professor UX and usability at the faculty of Industrial Design Engineering of TU Delft. His research focuses on UX design & evaluation methods. He is currently involved in various research and developments projects on UX in relation to issues like playful persuasion and social connectedness, in various contexts (e.g., home and professional environments, health & care). He was involved in organizing various workshops and SIGs on UX definition and evaluation methods (e.g., at CHI, Interact, MobileHCI, British HCI).

Kari Kuutti is a Professor in HCI at the Department of Information Processing Science, University of Oulu, Finland. He has been actively searching theoretical explanations what happens in IT use situations since early 1990s, and recently he has been actively stimulating theoretical discussion within UX research. He has been involved in organizing workshops, SIGs, panels, colloquiums etc. in CHI and various other HCI related conferences since 1990s.

Primary Contact

The primary contact for this SIG is Marianna Obrist from the HCI & Usability Unit, ICT&S Center, of the University of Salzburg.

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