

---

# Transferability of Research Findings: Context-Dependent or Model-Driven

**Ed H. Chi**

Google Research  
chi@acm.org

**Mary Czerwinski**

Microsoft Research  
marycz@microsoft.com

**David Millen**

IBM Research  
Cambridge  
david\_r\_millen@us.ibm.com

**Dave Randall**

Metropolitan University  
Manchester  
D.Randall@mmu.ac.uk

**Gunnar Stevens**

University of Siegen  
gunnar.stevens@uni-siegen.de

**Volker Wulf**

University of Siegen  
volker.wulf@uni-siegen.de

**John Zimmermann**

Carnegie Mellon University  
johnz@cs.cmu.edu

**Abstract**

In this panel we will explore two distinct approaches to reach transferability currently prevailing in the HCI community. We will discuss epistemological differences and the strengths and criticisms of each approach. Importantly, we will discuss the implications for HCI research practice given this diversity of methodological approaches.

**Keywords**

HCI methods, models, epistemology, practice

**ACM Classification Keywords**

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

**General Terms**

Theory

**INTRODUCTION**

The typical societal expectation towards academic communities is their ability to systematically grow a body of knowledge collaboratively, by having researchers and research groups share insights and draw on each other's findings. The gathered insights of an academic community are often associated with concept and theory building. Unfortunately, the CHI community has not yet been too successful in creating

---

Copyright is held by the author/owner(s).

CHI 2011, May 7–12, 2011, Vancouver, BC, Canada.

ACM 978-1-4503-0268-5/11/05.

concepts or theories which could substantially support the design of IT artifacts in human computer interaction (a more optimistic picture is drawn e.g. by [1]). Moreover, the contested nature of the disciplines which have contributed to the CHI community has meant there is little overall agreement concerning what those concepts and theories might be and how to deploy them in the best way [2, 3]. In particular, two distinct epistemological positions [4, 5], both drawing on their discrete disciplinary origins, throw the problem into sharp relief.

On the one hand, the positivist model [e.g. 6, 7] follows a theory-building approach derived from the sciences, particularly psychology. It assumes that theories can be generated which model the interaction of humans and computers in a design-oriented sense. Models and theories can be tested empirically and they are assumed to be valid beyond their specific context of origin. From a positivist understanding, it is the researchers' responsibility to express their findings in general terms. While these theoretical insights have been generated and validated under particular conditions, their description does not refer specifically to the context of origin – since it claims general applicability within the limits of its scope of validity. The positivist stance is often criticized for underplaying the relevance of context and for an over commitment to the experimental method.

In contrast, an 'interactional' model [e.g. 8, 9, 10] (itself disguising a number of different positions) questions whether the generalization of findings is possible in a context-independent manner. Therefore, (design) case studies are the preferred mode of research [e.g. 11]. Findings are normally presented

together with a thick description of the context in which they emerged. Theory building is either dismissed, looked upon with great suspicion or limited to the generation of concepts to describe the newly emerging phenomena. The core mechanism of concept building is the comparison of the case studies with earlier findings – be it other case studies or theoretical concepts. Claiming the context-dependency of its findings, this school of thinking lacks a convincing model of how to transfer design-relevant findings from one context to the next. Implicitly, it assumes that the reader of a case study rather than its writer is responsible for the transfer of findings to a new context. Arguably, this approach has made little progress towards establishing what we might call a 'corpus' of studies. In other words, the question of what are legitimate ways to generate, transfer or generalize knowledge remains a vibrant debate.

### **Panel Focus**

This panel examines the possibility that, in both cases, limited progress is a function of the continued disciplinary locations of the majority of studies presented at CHI and their linguistic cognates. It suggests that a more explicit focus on the issue of how to translate findings into usable and transferable results could be reached through serious attention to narratives. Right now, the reader is poorly supported by our practices in documenting findings, specifically if she is not an academic but a practitioner. Case based design research is documented in papers published in academic journals and conference proceedings. To be accepted at influential venues, these documentations follow the particular conventions of current academic debates. However, academic formats and writing styles are not necessarily the best way to document the

breadth of insights case study research typically generates.

The panel will deal with the fundamental but still unsolved problem: how to present insights in a way that they can be transferred from the context they are generated in to the one they should be applied in. Since CHI is an applied science and engineering community, specific care needs to be given to knowledge sharing with practitioners from the IT industry. We will deal in particular with the following questions:

- What are the theoretical and practical strengths and weaknesses of the existing approaches to transfer insights?
- What are the appropriate specification of content and level of granularity for generating design-oriented theories and what are appropriate strategies for their evaluation/falsification?
- How do case studies need to be set up to generate findings with relevance for CHI?
- Which are the appropriate formats and narratives for the documentations of case studies in HCI?
- How to build larger corpora of case studies and make them accessible for an information and knowledge seeking audience of academics and practitioners?
- Which role could theory play in case study research and how should 'theory' be understood?

Position statements of the panelists tackle already some of these issues [12].

### **PANEL Organizers**

**David Millen** is a research manager in the Collaborative User Experience group at IBM T J Watson Research in Cambridge, MA. His group develops new

social software applications, and explores the social, business, and technological implications of these new tools through field studies with small teams and communities. David's current research interests include modeling social interaction, intercultural collaboration and governance policies and practices.

**Volker Wulf** is a professor in Information Systems and the Director of the Media Research Institute at the University of Siegen. His research centers around the exploration of innovative IT artifacts in different domains of practice. Methodologically his work is based on design case studies which combine an empirical prestudy with an innovative design concept and its evaluation in practice.

### **PANELISTS**

**Ed H. Chi** is the Area Manager and Principal Scientist at (Xerox) Palo Alto Research Center's Augmented Social Cognition Group. He leads the group in understanding how Web2.0 and Social Computing systems help groups of people to remember, think and reason. His work on theory building tries to uncover the underlying mechanisms in online social systems such as Wikipedi, Twitter, and Delicious.

**Dave Randall** is a Principal Lecturer in Sociology at Manchester Metropolitan University. He has written extensively on the relationship between ethnography and design in CSCW and other contexts.

**Gunnar Stevens** is an assistant professor in Human Computer Interaction at the University of Siegen. From an End User Development perspective, he developed the epistemological foundations to better understand the appropriation of IT artefacts. His current work tries

to synthesize ethnographically-oriented and participatory design approaches based on a Pragmatist understanding of praxis.

**John Zimmermann** is an Associate Professor with a joint appointment in the HCI Institute and in the School of Design at Carnegie Mellon University. His research has three main focuses: (i) the use of research-through-design as a research approach in HCI; (ii) the application of product attachment theory in the design of interactive products and services, systems that help people become the person they desire to be; and (iii) the design of mixed-initiative interfaces that combine human and machine intelligence.

### References

1. Myers, B., *A brief history of human-computer interaction technology*. interactions, 1998. **5**(2): p. 44-54.
2. Zimmerman, J., E. Stolterman, and J. Forlizzi, *An analysis and critique of Research through Design: towards a formalization of a research approach*, in *Proc. of the 8th ACM Conference on Designing Interactive Systems*. 2010, ACM: Aarhus, Denmark. p. 310-319.
3. Dourish, P., *Implications for design*, in *Proceedings of the SIGCHI conference on Human Factors in computing systems*. 2006, ACM: Montreal, Quebec, Canada. p. 541-550.
4. Rohde, M., G. Stevens, P. Brödner, and V. Wulf, *Towards a paradigmatic shift in IS: designing for social practice*, in *Proc. of the 4th International Conference on Design Science Research in Information Systems and Technology*. 2009, ACM: Philadelphia. p. 1-11.
5. Harrison, S., D. Tatar, and P. Sengers. *The three paradigms of HCI*. 2007: alt.chi.
6. Card, S., T. Moran, and A. Newell, *The psychology of human-computer interaction*. 1983: CRC.
7. MacKenzie, I., *Fitts' law as a research and design tool in human-computer interaction*. Human-Computer Interaction, 1992. **7**(1): p. 91-139.
8. Randall, D., R. Harper, and M. Rouncefield, *Fieldwork for design: theory and practice*. 2007: Springer.
9. Schmidt, K., *Cooperative Work and Coordinative Practices*. to appear: Springer London 2011.
10. Stevens, G. and V. Wulf, *Computer-supported access control*. ACM Trans. Comput.-Hum. Interact., 2009. **16**(3): p. 1-26.
11. Wulf, V.; Rohde, M.; Pipek, V.; Stevens, G.: Engaging with Practices: Design Case Studies as a Research Framework in CSCW, in: Proceedings of ACM Conference on Computer Supported Cooperative Work (CSCW 2011), ACM-Press, New York 2011, in press
12. Chi, E.; Czerwinski, M.; Miller, D.; Randall, D.; Schmidt, K.; Stevens, G.; Wulf, V.; Zimmermann, J.: Position Papers for CHI 2011 Panel on 'Transferability of Research Findings: Context-Dependent or Model-Driven', in: International Reports on Socio-Informatics (IRSI), International Institute for Socio-Informatics, Bonn: <http://www.iisi.de/102.0.html>

### DISCUSSANT

**Mary Czerwinski** is a Research Area Manager at Microsoft Research, where she manages many diverse areas of human-computer interaction, including social computing, information visualization, CSCW, sensor-based interaction and healthcare. Her own area of research focuses on multitasking and attention, distributed group awareness and communication tools. Mary has a long standing interest in exploring the role of theory in HCI.