

**Title**

Developing a questionnaire to assess experienced human-computer relations

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**Paper Abstract**

Interaction paradigms describe notions of how to interact with computational artifacts. Examples are graphical user interfaces, tangible, and body-based interaction. The development of these paradigms parallels an increasing *embodiment of technology*<sup>1</sup>. In this view, artifacts are designed to “disappear” while being used<sup>2</sup> and become part of people’s body<sup>3</sup>. This predominant approach in human-computer interaction (HCI) seems at odds with recent developments. The resurgence of “artificial intelligence” implies self-learning, self-reliant and proactive artifacts as well as users, who are in “dialog” with those systems rather than “acting through them”. In contrast to embodiment, this suggests an alterity relation, where technology becomes “other”<sup>4</sup>. Although philosophers have long acknowledged these different relations, the field of HCI recognizes alterity relations as rather exceptional, undesirable and naïve, and thus sought to be counteracted by design. In an attempt to acknowledge the full range of human-computer relations, we developed a questionnaire to evaluate the momentary interaction paradigm on a continuum from embodiment to alterity. We describe the questionnaire construction based on philosophical theories of technology and the HCI concepts of tool-extension and social presence. The questionnaire can be used to systematically collect and explore computational attributes that lead to the perception of technology as embodied or “other”.

**Short CV**

Diana Löffler is post-doc at the "Ubiquitous Design / Experience and Interaction" group at the University of Siegen, Germany. She has a background in psychology and holds a PhD in human-computer interaction from University of Würzburg, Germany. Her work focusses on theoretical and practical aspects of designing interactions with technology that is ‘sort of’ alive.

Leonie Becker has a Bachelor of Science Degree in Psychology (Maastricht University). She is currently finishing her master’s degree in Work and Organizational Psychology at Maastricht University by writing her thesis about psychological factors that influence trust, risk perception and acceptance regarding automated systems. Additionally, she is also a master’s student at Siegen University, where she studies Human-Computer Interaction.

Marc Hassenzahl is professor for “Ubiquitous Design” in the Institute for Business Information Systems at the University of Siegen, Germany. With his group of designers and psychologists, he explores the theory and practice of designing pleasurable, meaningful and transforming interactive technologies.

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<sup>1</sup> Dourish, *Where the Action Is.*; Van Dijk and Hummels, “Designing for Embodied Being-in-The-World: Two Cases, Seven Principles and One Framework.”

<sup>2</sup> Ihde, *Technology and the Lifeworld : From Garden to Earth.*

<sup>3</sup> Bergström et al., “Tool Extension in Human-Computer Interaction.”

<sup>4</sup> Ihde, *Technology and the Lifeworld : From Garden to Earth.*