Careful Design: Implicit Interactions with Care, Taboo, and Humor

Karey Helms
KTH Royal Institute of Technology
Stockholm, Sweden
karey@kth.se

Abstract

Data-driven technologies increasingly participate in
everyday experiences as implicit interactions that are
unseen and dynamically configured. My research explores
the design and implications of implicit interactions by
designing within social relations of care that are often
considered taboo. These include caring for loved ones and
technologies to manage human excretion: situations that
are difficult to quantify and where an unintended
consequence of implicit interactions can be devastating. To
carefully challenge definitions of implicit interactions, I draw
upon autobiographic and speculative design methods, as
well as humor to unsettle others and implicate myself in
care.

Author Keywords

Care; humor; taboo; implicit interaction; speculative design;
autobiographic design

CCS Concepts

•**Human-centered computing** → **Human computer
interaction (HCI);**

Introduction

As everyday objects and environments are increasingly
embedded with data-driven systems our interactions with
and through technology are becoming increasingly

contextual and dynamic. This has resulted in what some describe as implicit interactions, or interactions with technology that are unseen or unnoticed yet are proactively operating on the behalf of humans [11]. The technology driving these interactions, such as the algorithmic systems of home automation, often lacks physical form and participates in larger assemblages of entangled and concealed local and global relations [13]. With complexity hidden in a guise of convenience and efficiency, the messiness of human idiosyncrasies, desires, and needs can be misinferred and misused. This results in a reconfiguring of social and material agencies between human and non-human actants, whereby it is not clear what is being sensed, the implications of this information being used, and when and how to intervene with technology deliberately made invisible.

In response, I am investigating what is at stake and the role of design in this shift towards data-driven implicit interactions by designing where technology is often considered out of place: within social relations of care that draw upon intimate and somatic data. These involve situations that are difficult to quantify, where humans hope to feel their safest, and where a breakdown or unintended consequence of technology can be the most revealing, devastating, and shameful regarding personal well-being. An example is the management of bodily waste through speculative technology that predicts when and how badly one needs to urinate [7]. By critically engaging with such situations of care, I draw upon concepts of intimacy and taboo to challenge definitions of implicit and explicit interactions while investigating the sociomateriality [10] of data-driven technologies operating in the background.

Inspired by Maria Puig de la Bellacasa's posthumanist perspective, I view care as "non symmetrical, multilateral, subjective, obligations that are distributed across more than human materialities and existences" [2, p. 221]. Through this lens, care is a diverse and interdependent mesh of *doings* to sustain worlds for and by many beings. This accentuates that by "*thinking with care*" we might detect relational arrangements between humans and non-humans in technologies designed for activities of care, while also address the configuring of affective and ethical agencies regarding who is caring and how [2].

Research Questions

My research investigates three interrelated questions:

- How do data-driven implicit interactions reconfigure agencies in relationships of care?
- How can design carefully provoke responses about this reconfiguring of agencies?
- What other definitions of implicit interactions are revealed from designing with care?

The first question draws upon posthumanist perspectives to look differently at relationships of care and that takes into account the vitality of data, design, and other interdependent actants. The second question points to the configuring of my design space within taboo contexts, and who, where, and how specific methods intentionally provoke through critique and humor. The third question aims to conceptually reframe implicit interactions by surfacing new qualities and definitions from designing for and with care.

Work in Progress

My design-led research draws upon autobiographic and speculative design methods [8]. Autobiographic design and data-gathering enables a strong sensitivity towards intimate and taboo domains through access and attention afforded by first-person reflections [12]. Speculative design

challenges the status quo, including the why and how of taboos, with a critical commitment to how things could be different by materializing existing ideals and possible futures [4]. At the current stage of this research I have been working on two projects: Spying on Loved Ones and Technologies of Human Waste.

Spying on Loved Ones
My PhD research began with an autobiographical design probe that investigated how my partner and I communicate through shared domestic objects when one is at home and the other is not [6]. Through the creation of a custom informational infrastructure by the deployment of simple sensors around the home, I was able to monitor and speculate around my partner's usage of particular objects and spaces. While the project was initially grounded in a genuine concern for his well-being, as a research study and artifact it surfaced social tensions within performances of care [3]. Caring was inadvertently reconfigured as spying, an absurdly obvious post-prototype reflection, giving rise to the concept of "leaky objects" to describe unintentional interpersonal communication through the leaking of implicit information by shared objects in an intimate relationship.

This *leaking* ascribes a curious animacy to the objects, data, and information involved, and an indistinct relation between each other and my partner, myself, and my research environment. Viewed as actants, these non-humans have their own efficacy and material agency [1], which complicates perceived power imbalances and entangles them as accomplices in care. While this particular probe is no longer active, next steps include further analyzing it and other devices designed for intimate relations of care to unpack non-human participation.

Technologies of Human Waste
The second project of my research investigates data- and inference-driven interactions in the management of bodily excretion. The first phase of the project investigated the leveraging of intimate and somatic data to manage urination through the detailing of a design space comprised of three methods: a critique of market exemplars, three conceptual design provocations, and autobiographical data-tracking of my own urination routines [7]. From this design space, I contributed three considerations for designing with highly intimate and somatic data, as well as methodological opportunities for re-conceptualizing bodily excretion.

The three considerations include the labeling of somatic data, the actuating of bodily experiences, and the scaling of intimate interactions. The labeling of somatic data accentuates instability and uncertainty within inference-driven technologies, and how the labor of labeling can potentially transform bodily care. The making explicit of previously implicit sensations through the actuating of bodily experiences unintentionally displaces social agencies. The scaling of intimate interactions highlights a networked fluidity of somatic experiences and performative relations within power structures. Taken together, all three surface social and material complexities in the design of technology implicit through computational inference making.

I also contributed my methodological approach from the first phase of this project, and in particular how I used a first-person perspective to care for my design space. While autobiographical data-gathering and labeling was initially instigated to defamiliarize myself with my everyday routines of going to the toilet, it also became a tool of maintenance when used to reframe the three conceptual design provocations. Through noticing and reflecting, I deliberately centered myself as to not view the domain and associated
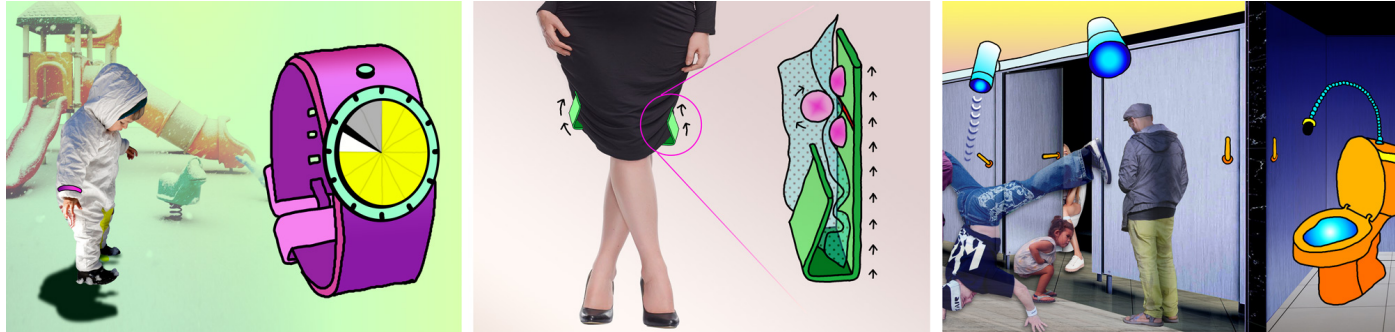
Figure 1: Three design provocations that predict how badly one needs to urinate. From left to right: Truth and Dial, Clip and Ship, and Survey and Shoot. The third is a camera network that grants access to public restrooms based on who has the greatest urge to urinate.

design challenges from above [5], but to carefully immerse myself as an intertwined body and design researcher.

An important element in the initial and ongoing design work for this project is humor. The designs of the three provocations employ a playful aesthetic as exaggerated solutions to urinary problems (Figure 1): a use of humor as an invitation to closely consider a taboo topic while making evident that they are provocations rather than solutions [9]. In this particular form, humor aims to care for the communities I care for by providing access to laugh with me at absurd yet relatable proposals. This is what Puig de la Bellacasa refers to as "*dissenting within*", whereby I am implicated in the design space and problem space.

The next steps within this project are the continued development of the three conceptual provocations in physical form, and in particular Survey and Shoot (Figure 1), to investigate other intertwined perspectives and involved relationships. This includes the prototyping of the provocation's form and packaging in conjunction with

data-driven services and broader networked potentials in a social and cultural context. Through this approach, I aim to explore care by human and non-human actants as an affective and collective endeavor.

Conclusion

Through this research, I hope to unravel experiences and implications of implicit interactions by carefully designing for intimate relationships of care. By engaging in contexts often considered taboo, I deploy humor to disturb expectations, invite engagement, and make my own entanglement explicit. From a post-humanist perspective, I aim to contribute new understandings of how agencies are reconfigured by data-driven technologies, design methods can carefully provoke, and implicit interactions are defined.

Acknowledgements

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