
Phenomenology through Design: A Tale of a Human Tail

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ABSTRACT

Most current research in the intersection of Human-Computer Interaction (HCI) and philosophy consist of HCI researchers using concepts and theoretical frameworks from philosophy as lenses for interpreting and reflecting on technology and its use. This has given valuable new insights to the field, and allowed for a critical stance on important issues. In this paper, I argue for another potential synergy between HCI and philosophy, by adopting and adapting philosophy's method of inquiry as research method in HCI. The aim of the *Human Tail Project* was to investigate how the body extends itself through technology. I adopted a phenomenological research method, and added the construction of bodily extensions to the phenomenological process of "bracketing" (epoché). By "making my body strange" with a mechanical tail and reflecting on the experience of use, I acquired new insights into "my familiar body" and Merleau-Ponty's concept of *the lived body*. The phenomenological research method brought an almost child-like spirit of curiosity and wonder to the research process. Philosophical methods of inquiry thus have the potential to spur more explorative HCI research, in pursuit of the "unknown unknowns" of the human-technology relation.

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KEYWORDS

Research method; Phenomenology; Body enhancements; Merleau-Ponty; H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.



Figure 1. The tail in use.



Figure 2. A 3D printed version of the tail.

INTRODUCTION

Throughout the history of Human-Computer Interaction (HCI) research, philosophy has been made relevant in several ways. Although written primarily as a criticism of the promises of symbolic Artificial Intelligence (AI), Dreyfus' "What Computers Can't Do" [5] from 1972 is good example of how concepts from philosophy can enable an informed reframing of the human-technology relation. By making the implicit epistemological and ontological assumptions of symbolic AI explicit, he showed that they represented a specific theory of mind (cognitivism), which much of current continental philosophy had rejected. This enabled him to foresee the limitations of symbolic AI decades before the AI community itself learned this the hard way. In a similar manner, Winograd and Flores [18] in 1986 used phenomenology, autopoiesis and speech act theory to reflect on the philosophical foundations of AI and design. Likewise, Dourish' "Where the Action is" [4] from 2001 used phenomenology to argue for an embodied approach to design. In 2000, Svanæs [16] used the phenomenology of Merleau-Ponty to reflect on interactivity and the role of the lived body in human-computer interaction. The list is in no way exhaustive, as philosophy has currently been applied to a wide set of HCI issues.

The above examples can be classified as philosophy-inspired HCI research, where the researcher draws on discourses and concepts from philosophy and make those relevant as alternative lenses for understanding phenomena of human-computer interaction. Another potential synergy between HCI and philosophy is by adopting and adapting philosophy's method of inquiry as research method in HCI. In the following I will illustrate this approach with the human tail project, where I used explorative design as part the "bracketing" process of phenomenological inquiry to study the body-technology relation.

THE HUMAN BODY IN HUMAN-COMPUTER INTERACTION RESEARCH

In the first decades of HCI research, the dominant paradigm for describing the human side of human-computer interaction was different variations of cognitive science. Deeply rooted in most of these theories is the Cartesian assumption that man is the sum of body and mind, - a body having a mind, or a mind having a body. The human body was consequently to a large extent modeled as a "mechanical" body with sensors and actuators, controlled from the mind.

Since the early works of Dourish [4] and Svanæs [16] around the turn of the millennium, currently see a vast literature on the role of the body in HCI (see [9], [17] and [8] for an overview). Merleau-Ponty's phenomenology of the body [11] has been an important inspiration, but also somatics [13], Gibsonian ecological psychology [6], pragmatics [3], and more recent philosophical contributions like Somaesthetics [14].



Figure 3. The author with a tail.



Figure 4. A commercialized version of the tail for the cosplay community (<http://costail.co>).

THE HUMAN BODY IN PHENOMENOLOGY

Merleau-Ponty was the first philosopher to make the human “lived” body his explicit object of analysis [11]. He makes a distinction between the first-person perspective of being a body and the third-person perspective of observing the body as an object in the world. In German, there are two terms for the body, *Leib* and *Körper*, corresponding to the first- and the third-person perspective respectively.

The lived body has an ability to adapt and extend itself through external devices. Merleau-Ponty used the example of a blind person's stick to illustrate this. When the blind person has learned the skill of perceiving the world through the stick, the stick has ceased to exist as a stick and has become part of that person. It has become part of the body and at the same time changed it. Merleau-Ponty described a blind person's use of a stick (cane): “*Once the stick has become a familiar instrument, the world of feelable things recedes and now begins, not at the outer skin of the hand, but at the end of the stick. ... the stick is no longer an object perceived by the blind man, but an instrument with which he perceives*”. ([11], p. 176).

The body's ability to “become more” through technology is at the core of HCI research, and invites several fundamental research questions of both technological, empirical and experiential nature. Expressed in HCI terminology, the experiential research question could be:

“What is the bodily user experience of being extended through technology?”

Having stated the research question, we need to investigate how to answer it (research method).

THE PHENOMENOLOGICAL METHOD OF INQUIRY: BRACKETING (EPOCHÉ)

Husserl described phenomenology's purpose as “going back to the things themselves” [7]. This should not be understood as a quest for finding a phenomenon's essential qualities as objective reality “in the world”, but as a search for how phenomena manifest themselves as experienced reality for a human being. Consciousness thus becomes phenomenology's object of analysis, not as an entity in the world to be studied with the methods from the natural sciences, but as that which makes our experience of any phenomenon possible.

The phenomenological method of inquiry, as described by Husserl, consists of a continuous process of “bracketing” or “reduction”. This requires a preliminary act of epochè, “*conceived as the suspension of the trust placed in naturalistic beliefs regarding both the certainty of science and the objectivity of the world.*” ([12], p. 53). Depraz et al. [2] describe the phenomenological method of inquiry at the personal level as a three-step process of Suspension, Redirection and Letting-Go:

1. Suspending your “realist” prejudice that what appears to you is truly the state of the world; this is the only way that you can change the way you pay attention to your own lived experience; in other words, you must break with the “natural attitude”.

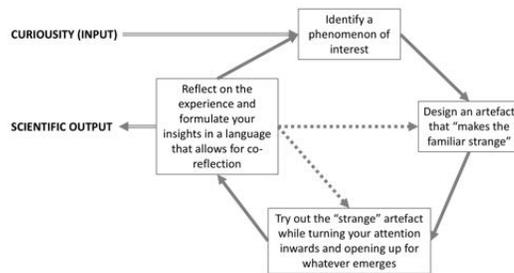


Figure 5. Phenomenology-through-design.

The four phases of *Phenomenology-through-design*:

1. Identify a phenomenon of interest.
2. Design an artefact that “makes the familiar strange”.
3. Try out the resulting artefact while turning your attention inwards and opening up for whatever emerges.
4. Reflect on the experience and formulate your insights in a language that allows for co-reflection with your peers.

Iterate from (4) depending on the results of the reflection:

- To (3) if you assess that value can come from trying out the artefact in new ways to further explore the “strangeness” it creates.
- To (2) if you assess that value can come from designing another artefact to explore the phenomenon of interest.
- To (1) if the reflection points to a new phenomenon of interest.

2. Redirecting your attention from the “exterior” to the “interior”.
3. Letting-go or accepting your experience. (ibid., p. 25)

Suspending one’s beliefs is hard, and often requires an external existential event or the help of others. One method often used in the performing arts is to “make the familiar strange” by performing an act in usual ways [10]. An alternative way of making the familiar strange is through design, in this case by constructing bodily extensions that “make the body strange” as a way of suspending one’s implicit beliefs about the “familiar body”.

MAKING THE HUMAN BODY STRANGE: ADDING A MECHANICAL TAIL

As a first artefact in the phenomenology-through-design project of making the body strange, I built an artificial human tail [15]. It is approx. 80 cm long and is worn in a belt (Figs. 1-4). It consists of piano wires and 3D-printed joints, and is controlled by two servos, one for each degree of freedom (up-down, left -right). The tail is controlled by the user through accelerometer and gyro on the hip.

Wearing the tail leads to interesting experiences, as it indeed becomes an extension of your body. To me, the most interesting experience came when I took it off after having worn it for some time, and had a very direct bodily experience of being “tailless”. This sparked several reflections on my “familiar” body, and deepened my understanding of Merleau-Ponty’s concept of *the lived body*.

PHENOMENOLOGY-THROUGH-DESIGN AS RESEARCH METHOD IN HCI

Phenomenology-through-design implies designing artefacts that “make the familiar strange”. Figure 5 shows its four phases, which can be iterated in multiple ways. For the epoché to work, the “strangeness” must be experienced first-person, attention must be directed inwards, and whatever experience emerges must be accepted as genuine and taken seriously as a source of insight.

Phenomenology-through-design has similarities to critical design [1] in that it aims to provoke reflection. It differs in how these artefacts are used (art vs. epoché). It also has similarities to research-through-design [19]. It differs concerning the artefact (usefulness vs. making strange).

CONCLUSIONS AND FUTURE WORK

The *Human Tail Project* is an example of how philosophy can inform HCI research, not only through reading and being inspired by written works of philosophy, but by *doing philosophy*, i.e. adopting its method of inquiry as our research method for studying human-computer interaction. The resulting research was more playful and explorative than most research in HCI, as no working hypothesis needed to be formulated before the research could begin. This might be the main benefit of applying a philosophical approach to HCI research: it brings back an almost child-like curiosity and wonder to the research process, which allows for exploring the “unknown unknowns” of the human-technology relation. Further such research is needed to validate this claim.

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