Somaesthetic Exploration of the Personal Computer

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ABSTRACT

In this study we explore how the personal computer is part of what makes us as humans unaware of our body in the everyday life. We present SomaMouse and ConsciousLogin that explore two different ways of challenging this unawareness. While SomaMouse proposes a more bodily active way of controlling the computer's cursor in the interaction, ConsciousLogin forces focus on the bodily consciousness before the interaction. Our research and prototypes are based on the somaesthetic philosophy by Richard Shusterman that, by exploring fundamental features of our embodied ways of engaging in the world and transforming it through action and construction, can provide useful insights and practical skills to help designers produce products and situations that provide more rewarding and pleasurable experiences. While our prototypes are able to evoke a somaesthetic experience, they both fail to maintain bodily consciousness throughout the interaction. The primary responsibility for maintaining bodily consciousness lies within the person who uses the design. However we propose the idea of a mechanic connoisseur which implemented in a design guides and forces the user to a more somaesthetic awareness. We argue that somaesthetics can provide a more body conscious way of interacting with and designing for the computer.

Author Keywords
Somesthetic design; Body awareness; Design exploration

ACM Classification Keywords
Design; Experimentation; Human Factors

INTRODUCTION
In the last years there has been an increasing focus on our bodies. Fitness-trends, yoga and mindfulness are now part of the mainstream, still we tend to forget our bodies when

sitting in front of a computer resulting in pain and strained eyes. While there is a rising business in providing ergonomic solutions for people working at a computer all day long, there seems to be much more to explore about the bodily interaction in front of a computer than pure ergonomics demands. Richard Shusterman's philosophy of somaesthetics takes the body's importance for perceiving the world and creating a reality a step further a both practical and theoretical framework around the felt body as fundament for human nature.

The pragmatic approach of somaesthetics gives therefore a good starting point to explore how the personal computer is part of of what makes us unconscious about our bodies and how somaesthetics can challenge the existing situation in front of a personal computer through design.

The projects method is based on research through design therefore the following insights and conclusions are based on the design process and testing of our two applications SomaMouse and ConsciousLogin.

SOMAESTHETICS
Somaesthetics is originally proposed by Richard Shusterman, comes from an interdisciplinary field and is grounded in pragmatist philosophy and phenomenology[7].

Dividing somaesthetics into two different words, soma, the body, and aesthetics, our sensory appreciation, Shusterman elucidates the importance of our bodily movements as a part of our way of being and thinking. The key condition of somaesthetic philosophy is that all our experiences and interactions happen through our body which means that the physical body is as important as the psychological mind[5].

The body is in the somaesthetic instance ambivalent, on one side the human-being subjectively appreciates the world through the body and on the other side it sees the body as an object perceived in the world. The body is something you are and something you have. Another point in this context is that the body most frequently is perceived as something you have and use instead of something you are, so in our perception the body inevitably function as an object of consciousness[5]. This discourse increases somaesthetic alienation where the body is an object of consciousness rather than an emotional subject. It doesn't mean that our body doesn't need or deserve our attentive

consciousness, because regardless of the body considered to be an object or the center of subjective perception the body is our indispensable tool of tools[5].

How do we attend to or train our body as the tools of tools in a somaesthetic way? Well, it isn't enough just to engage and improve your body by thinking, you actively have to attend and engage in practical disciplines focusing on reflective somaesthetic consciousness. Disciplines like fx yoga, Tai Chi and Feldenkrais Method compromises systems of bodily postures and movements to develop a consciousness of the body that contains both the objectively functioning body and the subjectively feeling body[5]. A distinction can be made in somaesthetic practices between a self-directed and an other-directed approach. While self-directed means fx engaging in a practice that shall help your inner physical balance as yoga, the other-directed is obtained by the perception of others on your own body, as fx putting on makeup. However the distinction is simplistic as many practices compromises both[7].

An improvement of your body consciousness makes it possible to even overcome bad habits or improve "good" habits. Habits exists as part of our implicit memory, in everyday language it is called "muscle memory", which is helping us to unconsciously perform actions[6]. The implicit memory is acquired either through explicit and intentional training or unintended and unconscious repetition of actions. The improvement of body consciousness happens through actively, intentionally being aware of and engage in your implicit memory[6].

Somaesthetics focuses on the critical studies and the cultivation of how we experience and interact with the body as sensory tool to appreciate these experiences.

But what is a somaesthetic experience? In this paper we characterize the term somaesthetic experience through the following distinction: The ongoing experience through and of the body and the subsequently reflection on the previous experience. However, the first doesn't exclude the other and vice versa. Necessarily, the ongoing becomes the subsequent and vice versa. A somaesthetic experience is characterised as a ongoing transformation between the ongoing and the subsequent reflection[3].

RELATED WORKS
There has been a moderate number of inquiries of somaesthetics in design. In the field of HCI Kristina Höök et al (2015)[1] and Tecla Schiphorst (2011)[4] have provided important insights about the felt body and body consciousness. Our paper was inspired by the cover story of ACM Interactions July 2015 issue written by Kristina Höök et al. The research team's point of departure was Feldenkrais as the somaesthetic practice. They combined insights from this practice with different design methods and material workshops to create two somaesthetic designs[1]. While Höök et al. designed for a new specific somaesthetic experience our paper takes an existing interface to explore the somaesthetic qualities that evolves when changing the interaction patterns.

DESIGN PROCESS
Inspired by Höök et al.'s inquiry we also took Feldenkrais as starting point for our project and attended a few Feldenkrais lessons to understand what it means to perceive the body in a somaesthetic way. The manner we designed and researched can be described as autobiographical approach which means that we ourselves developed and tested our designs[2]. The decision of our approach is grounded in the idea that an somaesthetic approach requires basic understanding of the philosophy both through theoretical reading and practical exertion before you are qualified to research within it.

Potential users were only engaged once in participating in a probe-inspired user survey answering questions about the bodily experience while interacting with a computer. The fact that this project is mainly based on an autobiographical approach makes us unable to discuss the actual user experience because no users besides ourselves were involved. Still the insights and conclusions of the paper can be used as starting point for future inquires.

SOMAMOUSE & CONSCIOUSLOGIN
Our reflections on somaesthetics as a practical framework, the involvement in the Feldenkrais-practice and the exploration of design material and Probes-inspired user-survey led us to the production of two designs: SomaMouse and ConsciousLogin.

Each provide a different insightful approach to body consciousness and the use of the personal computer.

SomaMouse
With the installation of SomaMouse the typical body movements of a computer interactions move from hands to nearly the whole body. It replaces the classical mouse or touchpad and lets you control the cursor with the movement of your body. The cursor is linked to an accelerometer installed on a teeterboard. Mouse clicks are provided with the use of your feet.

In the original situation, before the implementation of SomaMouse, body consciousness only appeared when errors (glitches, which make you ask yourself if you are using the computer right), pain (back, eyes, neck after long hours of sitting) or external factors (sunlight, bad air that conflict with the computer interaction) occurred.

SomaMouse changes this situation by redesigning the traditional pattern of movement linked to the control of the interface's cursor. Through the new way of operating the cursor and hence the computer, SomaMouse requires consciousness focusing on how your body moves and how it feels in relation to external objects (the teeterboard).

An important part in somaesthetic practices is time and habituation. These two factors also play a significant role in the use of SomaMouse. After an initial period of time, where SomaMouse requires the user's consciousness to learn the new interaction pattern and therefore also the body's movement in relation to the action happening on the screen, the body consciousness disappears. The new movement is habituated by the body and the focus wanders

solely on the screen. This situation resembles the original one and the somaesthetic qualities are nearly lost. But even though these qualities are nearly lost and the fact that we aren't aware or conscious of our body the design still challenges our body in a physical way (eg. sitting in an upraised position, constantly moving the core of the body). Thereby the somaesthetic qualities exist more as implicit consciousness.

ConsciousLogin

The second design, ConsciousLogin, takes another approach on somaesthetics and the personal computer. The first interaction with your computer after switching on or waking it up from sleep happens mostly by typing in a password to unlock the computer. ConsciousLogin transforms this interaction into a moment of body awareness. To login the user has to place her or his hands on a pulse sensor to prove his presence. A voice guides the user through a breathing exercise to let him focus on different parts of the body. If the proceeding succeeds the user is logged in and can continue with the usual computer interaction.

Similar to SomaMouse ConsciousLogin replaces an existing interaction to provoke a somaesthetic experience. Though ConsciousLogin differs in taking departure in the assumption that body consciousness can not be found in the computer but has to start in oneself.

Here ConsciousLogin acts as, what we call, a mechanic connoisseur by providing an audio guide that leads the user through a body meditation that focuses on getting the user to be aware of the bodily sensations. In this sense the interaction with ConsciousLogin can be described as a self-oriented somatic practice that acts preventive in relation to the improvement of the cultivation of the use of the body and its sensations.

Through the autobiographical tests we experienced a change in the perception of the following interaction with the computer but just in a short period of time. The initial bodily reflection made us not only aware of the inner mechanisms of the body (like breathing and muscle tension) but also of what our body was surrounded by (GUI, chair etc.). Consequently the following interaction with the computer can be characterized as more clear and experienced in relation to the body. Still over time this feeling disappeared and we returned to old habits. This mainly happened because we as newcomers to the somatic practice or the somaesthetic field still need a connoisseur to remind us to be conscious of our body. A trained practitioner in somaesthetics would be able to maintain body consciousness but such a user would maybe not need a mechanic connoisseur such as ConsciousLogin at all.

The two designs SomaMouse and ConsciousLogin differs in ways of interaction but also got some problems in common. While SomaMouse tries to provoke a somaesthetic experience throughout the interaction with the computer, ConsciousLogin tries to influence the interaction with the computer in providing a somaesthetic experience in the beginning. Even if SomaMouse provokes body

consciousness as part of the learning process in the beginning, the habituation of the use makes it in the end not much different from the use of a mouse except the ergonomic aspects. ConsciousLogin demands body consciousness before the interaction to establish a better way of interacting with the computer, but this only have a say in the beginning of the subsequent interaction for a short period of time before it vanishes and the habitual manner appears.

CONCLUSION

The examination of different ways of using a personal computer shows that it was designed to be handled in a fluent and productive manner. Though working on a computer for hours as part of the job, the education or the private use shows some critical issues regarding the body's condition as experienced in pain and an impact on the perception outside the body. Somaesthetic philosophy gives a good starting point to challenge this problem but as SomaMouse shows conflicts with the fluent and productive manner the computer was designed for. If someone, everytime he uses a computer, should relearn the physical interface to control the cursor just to experience a bigger body consciousness and challenge her or his habits, complex interactions as manipulating a photo in an image processing software is most likely not to be accomplished. While an installation especially designed for a somaesthetic cause could use this insight it seems like drawback from a functional perspective.

ConsciousLogin on the other hand appears more compatible with fluent and productive interaction with the computer. Through a short initial ritual the computer as mechanic connoisseur can provoke a somaesthetic experience that can be maintained after this initial interaction, but only for a short period of time which indicates that the mechanic connoiseur needs to appear more often to maintain the somaesthetic experience.

This leads us to a main insight in the process of this project. Someasthetics, when implemented in design, is strongly dependent on the user's dedication. While the designer can engage him or herself in a somatic practice and see the design in a body conscious perspective and the design itself can act as mechanical connoisseur and initiator, the user's discipline and dedication to a somatic way of experiencing the situation is what in the end creates a somaesthetic experience. This interdependence shall in no way underestimate the potential role of somaesthetics in HCI. Products designed to provoke body consciousness and make an allowance for a felt body instead of a mechanic one that only focuses on function are consequently easier accessable to be experienced in a somaesthetic way.

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