Faster. Stronger. Better?

Designing for Enhanced Engagement of Extreme Sports

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Akademisk avhandling

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Abstract
The human body is capable of very rich and complex movements and gestures which we use in everyday life to manipulate, navigate and negotiate the world around us—it is our interface for human experience. However, as technology advances it simultaneously shrinks, moving closer to our bodies, intertwining with the many facets of our lives and positions itself between our experiences of the physical environments around us. When utilizing these technological systems in the context of intense sporting activities this competition for our focus leads to problematic scenarios—in the best case altering the aesthetic qualities of physical activity and in the worst case leaving us vulnerable to perilous situations.

This constructive design research thesis aims to understand how design may be used in relation to the body as part of an informative research approach to generate knowledge about how people actively engage with technology. This is deemed increasingly important as the advancements in technological connectivity and its corresponding trend in miniaturization create a pervasive effect that beckons closer examination and attention as these elements influence *how* we move. This is achieved by investigations conducted *through* studies in the area of extreme sports—specifically mountain biking and climbing activities— with the purpose of deepening understanding about human engagement with digital technologies situated within particular contexts. This research explores how the body's movements can be considered a material to be worked with, designed and assessed in order to influence performance behaviour.

Overall, the thesis undertakes a mixed methods approach to addressing interaction design issues within the context of movement. By advocating *making* as a generative activity, this research produces a series of artifacts drawing from notions of embodiment that is used to 'tease out' knowledge, which is then reflected upon and iterated. These corresponding artifacts embody and imbue designerly intention, subsequently raising pertinent questions of what it means to be connected in an ever evolving digital world, and how we can distinguish, address and begin to design *for/with* information realities relating to the natural and artificial.

Ultimately the thesis offers three main contributions to designers and researchers: (1) the *Stages of Performativity* framework that serves to increase awareness of the temporal aspects when designing for activities (2) A proposed model of the *makers prototyping process* and its corresponding *seduction loop* phenomenon (3) a series of non-prescriptive artifacts intended to be aspirational such as the *Blackbox*, *Heel hook*, *Morpheel*, *Griptile* and *Climbing Sleeve* prototypes. These contributions could be of particular interest to those intent on utilizing a maker driven prototyping practice by primarily proposing a comprehensive account of the transactions occurred during my prototyping process that is conducive to heightening awareness and cognition towards athletes engaged in extreme sports. The hope is to inspire an active role in designing experiences that enhance or support physical activities rather than impeding them.

In addition, this research approach advocates the unpacking or engagement with technological materials as a means for extending understanding and defining their functions in for the sake of employing them for thought provoking, prototyping endeavors to challenge complex and seemingly established systems while simultaneously providing a discourse in regards to the advancements of connected technologies towards a more humanizing experience.

Finally, it is suggested that the probing of alternate realities by means of constructive design exploration is an essential step towards sketching meaningful engagement when considering the role that we desire technology to play in our lives.

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embodiment, sports, interaction, design, technology, experience, HCI, UX, tactile, feedback

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