Swing That Thing: Moving to Move

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ABSTRACT

Swing That Thing… is a practice-based doctoral research project that examines how technology in on and around the body might be used to *poeticise* experience. Outcomes include a range of body-worn devices that encourage people to explore and move in playful ways. The works have evolved from a common design intent: 'to move the body through real and virtual extension'. By extending the body, mechanically, gesturally and sensorially we can encourage people to move in extra-normal ways, so view and experience their bodies from perhaps hitherto unknown perspectives. This affords insight into how our bodies can move and what this feels like; individual body-centric learning preferences; and the idiosyncratic nature of personal, corporeal expressiveness. The research is leading to a deeper understanding of how thoughtful applications of technology to the body might uncover our expressive and poetic potential, and why this might be of value.

KEYWORDS

Body-worn technologies, poetic, extension, core-body engagement, physical interaction.

ACM Classification Keywords

H5.m. Information interfaces and presentation: Miscellaneous.

General term

Design.

MOTIVATION

Historically, the application of technology to the body has tended towards an efficient address of functional issues [2], yet efficiency and functionality are not the only aspects of life that are important and not all experiences are enhanced by efficiency. There has long been discussion in Human Computer Interaction of the value and importance of ambiguity and enchantment as resources for design [3, 5]. I would like to extend this discourse to include the poetic.

The Poetic

The poetic is present in the moments in which we catch our breath, are filled with wonder or delight, surprised by unexpected juxtapositions, when we are totally present in the moment, when we laugh with wild abandon, or play like a child. In brief, in the moments when life has a special, undefinable quality that elevates experience beyond basic functional concerns. I believe such moments to be

meaningful, and reflective of a fundamental integration between mind, body, thought and experience that grounds us as it affords full engagement in what we are doing.

The *Swing That Thing…* praxis outcomes are designed for performance and play, but it is not just art or play that naturally align with poetics. Humans are, at their core, imaginative and expressive. These qualities are nourished and supported by the poetic. They are also fundamental to support and extend our basic physiological and sociological requirements beyond base functional needs. Applications of the research outcomes are also being considered for use in rehabilitation and disability research. The intention is to broaden thinking about the relevance of the poetic, beyond the arts, to provide expressive, physically and emotionally engaging tools for a range of social contexts.

Research Environment

The research sits within the broader field of Interaction Design, and is being undertaken in a dual context of Fine Art and Scientific Research. At the CSIRO, my colleagues are undertaking empirically-driven research into technical- and intelligent-textile devices for human performance advancement[1]. Using art and design ideation techniques and development processes allows me to leverage their research outcomes without being constrained by the same considerations or drivers. My work complements their development of increasingly rigorous evaluation techniques to characterize the subjective experience of using sensory augmentation technology, and opens up unexpected opportunities to undertake empirical validation.

METHODOLOGY

The driving hypothesis of *Swing That Thing…* is that by extending the body gesturally, mechanically and sensorially through the use of body-worn technology, we can extend our poetic and expressive potential. The field of concerns includes physical engagement, phenomenology, poetics and thresholds, ambiguity, enchantment, making strange [6] and emergent performativity. The body is central to the enquiry. More specifically, body dynamic, and hip- and core-body interaction are forefronted. We have a much lower resolution of control in the centre of our body than in our digits and limbs. Core body interaction is experienced in a very different way than more traditional forms of interaction achieved through mouse, joystick or other peripheral. It is often clumsy, in comparison, and brings our attention to the body in unusual or unexpected ways. The focus shifts

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[1] For details see http://www.csiro.au/science/ps3xg.html

between actions and the results of actions, so the interactions between body movement and the effects of technology, and the impact of each of the different types of extension, become apparent.

THE PRAXIS

The praxis represents a systematic examination of the role and impact of a range of elements that must be considered when designing body-worn devices: interface, input, output, sensing technology and, of course, the actual experience of interacting. The resulting suite of works encompasses a range of augmenting approaches: extending the body with light; simple and complex sound; graphic output; vibrotactile feedback; and literal, physical, tangible extension of the core of the body, horizontally. A range of soft prosthetic extensions have also been developed with the aim of plumbing people's willingness to imagine through the body in movement. This work acts as a lens through which to reassess the other outcomes and approaches. A short description of the works follows.[2]

> *hipDisk* extends the body horizontally to exploit changing relationships between hip and torso to actuate simple tones. *The hipdiskettes* iterate this through time and space to afford a deeper examination of the interconnection between choreography and composition, as well as more complex sonic output.

> The *gesture≈sound experiments* extend the body with sound to mesh gestural/physical and sonic composition. The aim is that sound production become an inherent and unavoidable consequence of moving the body.

> The *Light Arrays* extrude the body with light to magnify articulations, gestures and postures. They highlight how a person's movement physically impacts space and how the different parts of their bodies interact with each other and others in physically shared environments.

> *hipDrawing* turns the wearer into a human, hip-controlled Etch A Sketch.[3] *vibroBod* is a hip-based vibro-tactile array used to create a human wire-loop game.

> Finally, *the OWL project* is a series of open, speculative body-devices, designed without a pre-defined function and tested as design 'probes' to ascertain what functionality they might have. Rather than beginning with technology, the aim is to encourage the conceptualization of 'sufficiently advanced [body-worn] technologies' [1], which can then be designed.

REFLECTION

Each project offers a different space or context for physically driven expression. By examining the interactions between body movement and the effects of technology focus is brought to bear on the nature of expressive engagement and how poetic this feels. Relationships to and from the body, as well as to the poetic potential of different kinds of technological extension can thus be examined.

In *Swing That Thing…* performance is viewed as a catalyst for bringing attention or conscious awareness to shifting relationships to the body in expressive spaces and contexts. Kozel asserts that performance can act as a catalyst for understanding wider social and cultural uses of digital technology, and that performative acts of sharing the body through our digital devices can foster a collaborative construction of new physical states and levels of conscious awareness [4]. My outcomes to date support this.

CONCLUSION

The breadth of my approach is leading to the formulation not of a simple methodology, but rather of a foundation from which to understand the value of considering the poetic during the development process, including what this might mean, and the different ways it might be approached. Many of the works cited are still in development. Nonetheless they demonstrate that extending the body gesturally, sensorially and/or mechanically with body-worn technology engages wearer and observer in an ongoing, evolving process of creation, reflection and construction of new physical states and levels of conscious awareness, and that this is experienced as poetic. Articulating how to understand and approach this in a range of contexts is the remaining challenge.

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[2] For details and related publications see http://daniellewilde.com

[3] http://www.etch-a-sketch.com