Swing That Thing…
moving to move:

Extending our expressive and poetic potential

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Abstract

Swing That Thing: moving to move is practice-based research that examines how extending the body with technology might extend our "poetic" and "expressive" potential. A definition of both of these terms, in relation to physically engaging, body-worn technologies, is elaborated. A range of works that encourage people to explore and move in extended and playful ways are used to illustrate different aspects of the proposed definitions. Praxis outcomes from *Swing That Thing…* are then discussed. Each work explores "extension" from a different approach. This creates a broad foundation from which to examine the research question. Extending the body mechanically, gesturally and sensorially can encourage people to move in extra-normal ways, so allow us to view and experience the body from new perspectives. It affords insight into the idiosyncratic nature of personal, corporeal expressiveness, as well as the impact of technological extension. The *Swing That Thing…* research is leading to a deeper understanding of how thoughtful applications of technology to the body might uncover our expressive and poetic potential, how to approach this with intention, and why doing so might be of value.

Introduction

The idea that people have poetic and expressive potential is not new, per se. Nonetheless, discussing these ideas in concrete terms can be challenging. To support a coherent discussion, I define the terms "expressive" and "poetic" in relation to body-worn systems and devices, before discussing in any detail the *Swing That Thing…* praxis outcomes.

For the purpose of this article, and the *Swing That Thing…* project, the word "expressive" refers to non-verbal forms of expression. This includes, but is not limited to: abstract physical expression; musical and other sonic expression; physical interaction with a space, an environment, alone or with others; expression through 2D graphic output – literally drawing with the body in space, leaving graphic traces on a projection area or screen; and expression through 3D output – drawing through 3-dimensional space with lines of light that extend out from the body. While this list is clearly not exhaustive, it is useful to frame and situate.

Articulating "the poetic" is more contentious. I believe the poetic is a key foundation for development of body-worn systems if the developers want to arrive at meaningful outcomes, relevant beyond improved functionality or efficiency. Notions of the poetic are often instinctive, extra-discursive, embedded in experience and perception in ways that cannot automatically or easily be defined through language. Bringing such notions into a conscious, articulate space can be challenging. In this article I propose an emergent definition, which I examine through and against a number of practical examples. The claim is not that some idealistic, pristine truth exists beyond language. Rather the intention is to provide a foundation for a broadly applicable definition that can assist the discussion and consideration of the poetic in relation to body-worn systems and devices. By doing so, I recognise that, in the proposed context, understanding is often embodied rather than intellectual.

Body-worn systems can be novel devices that enable new information, experiences and engagement in new environments. They can lift us out of the everyday to enable experiences that go beyond the mundane, the prosaic or the merely functional, but they do not automatically do so. Understanding the value of a poetic approach and what might constitute or lead to poetic experiences is fundamental.
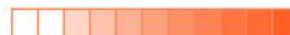
In *Swing that Thing…* a range of approaches has been taken, each evolved from a shared design intent: *to move the body through real and virtual extension*. Extension is a common device used to draw attention to the body. It has been of seminal importance in art and media theory (Shklovsy 1965 , McLuhan 1964, Clarke 2008) and resonates well with notions of the poetic when considered through the lens of phenomenological discourse. In the following section I map out a pathway to an understanding of poetic in relation to physically engaging extension of the body, drawing on phenomenology and discussions of "poetic language".

Defining Poetic

Historically, the application of technology to the body has tended towards a functional analysis of efficiency issues (Djajadiningrat, Matthews, and Stienstra 2007). However, efficiency and functionality are not the only aspects of life that are important. Not all experiences are enhanced by efficiency. People's preferences in this regard are also not always predictable – they can shift and change over time, depending on circumstances, mood or humour. What is ideal for one person may not work at all for someone else. If we acknowledge the complexity of human beings, it is clear that focusing on increasing functional efficiency is to respond to a small fraction of life's concerns. In some circumstance doing things inefficiently, operating to a personal logic that may be incoherent to an outside observer, can be compelling. I suggest that such approaches might also be "poetic".

The poetic is present in the moments when we catch our breath, are filled with wonder or delight, surprised by unexpected juxtapositions, 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 both meaningful and reflective of a fundamental integration between mind and body, thought and experience, that grounds us as it affords full engagement in whatever we are doing. The poetic, like creativity itself, should be considered a part of life as a whole and not just a property of artistic endeavour. Humans are intrinsically imaginative and expressive. I suggest that these qualities are

not only nourished and supported by the poetic, but they are fundamental to a meaningful existence beyond base functional needs.

The emergent definition proposed herein considers a range of criteria such as the use of language, including non-verbal languages particular to body-worn devices and systems. It reflects on the importance of action, narrative and meaning-making in experience, and on the qualities of attention brought to the body as a result of wearing or viewing a body-worn system. It contemplates the nature or quality of embodied engagement and how this might relate to, or shift, experiential and conceptual thresholds. It also considers a device's ability to engage the imagination or enchant the wearer or viewer, and the nature or quality of physically interacting with the effects of technology — whether or how this might extend the way we see, imagine or experience the world through our bodies and how this might shift our relationships to our bodies. These criteria combine to help us analyse if and why a work might be considered or experienced as poetic.

Mapping poetics

If we consider poetry as a form of art in which language is used for its aesthetic and evocative qualities in addition to, or in lieu of, its ostensible meaning, we can consider how this might relate to body-worn devices and systems, which use a range of languages to arrive at their final embodiment. Body-worn systems use languages of form, texture, colour, time and movement, as well as discipline-based languages of fashion, technology, architecture, performance and interaction design. Each of these is employed for its aesthetic and evocative qualities in addition to, or in lieu of, its ostensible meaning, just as when a poet creates poetry, or an author uses poetic language.

Poetic language is dense, imagery-laden and suggestive. Susan Stewart, in her book *On Longing,* describes it as a complex mix of languages, detached from their context of origin, displaying the oxymoron of the sign: while the signifier may be material, the signified cannot be (Stewart 1993). She suggests that the poetic is so through suggestion, allusion, signification, rather than actual physical form, and that "poetic language"
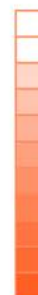
is an extension of everyday language. It is heightened in style, filled with signs and signifiers, juxtaposes different perspectives or modes, and allows for multiple interpretations. Slippage occurs between what is unsaid, culturally assumed or pointed at through suggestion, what we each bring to our experience of the world, and what is materially embodied. Poetic language has a descriptive power that makes visible, as it shapes the way we perceive both the landscape of action, and our relationship to that landscape. This, naturally, affects the way narrative experiences unfold. [1]

Body-worn systems draw from a broad palette of languages. However the results cannot be presumed to be poetic. It is the use of language that determines how poetic an experience or a body-technology-environment will be. Language can also be used in natural, direct and pedestrian ways. The question that drives this search for a definition is how we might consciously arrive at a poetic outcome.

Mapping interaction

"Poetic" can be used to describe the sensibility, insight, or faculty of expression attributed to poets and poetry – the elevated or sublime in expression, relating to artistic creation, composition, or poiesis (OED). It is a quality commonly ascribed to works of art and design when they capture the imagination or provide unexpected ways of considering a subject or object.

Poiesis (from the Greek, Ποίησς) means "making", "creating" or "producing". It is a verb, therefore a word that embodies action and transformation as well as ongoing narrative experience, all of which are grounded in the body and, I suggest, can be considered fundamentals of interaction and interactive experiences.

"Inter-action" implies ongoing interlinked actions that occur in a cyclical or concatenated relationship – each action provoking an event or a reaction, which in turn provokes another event or series of events, actions, reactions. It is not necessary that this process be complex, or even looped. What is important is to consider the evolution of the relationships between action, transformation and ongoing narrative experience. If the narrative evolves

in ways that are surprising, unexpected, less than obvious, indirect, this affords the kind of suggestion, allusion, signification, juxtapositions and slippages that support multiple interpretations. Such experiences align well with Stewart's notion of "poetic language", suggesting that if we extend this notion to non-verbal languages, bringing it into and onto the body, we can begin to consciously craft such experiences poetically.

Phenomenology, enchantment and a consideration of thresholds situate poetic uses of non-verbal languages in the context of physically engaging interaction. They help us move towards a clearer understanding of what it might mean to poeticise experience in the context of body-worn technologies.

Poetic & Phenomenological Thresholds

Thresholds seem to be intrinsically related to the poetic. In *Poetics of Space*, for example, Gaston Bachelard talks about the poet speaking on the threshold of being, and poetry taking place on the threshold of language (Bachelard 1994). He posits the notion that communication, concepts and experiences can exist outside of, as well as within, natural, everyday cognitive and linguistic states. As if there is a threshold separating our normal experiences from those that can be accessed through poetry or poetic thinking. Stewart also discusses thresholds, proposing an interdependent dichotomy between what she calls 'natural language' and 'poetic language'. She suggests that while thresholds exist, they are fluid and mutable (Stewart 1993).

If Bachelard's discussion is extended to inorporate this mutability, and Stewart's discussion taken beyond language, it is not incoherent to suggest that the poetic can both overlap and exist within normal experiences. If this is so, at what point does our perception of something shift from being natural to being heightened, extra-normal, or "other-than-natural"? And how can we have any certainty about, or measure, when something is experienced as poetic?

I earlier proposed a number of criteria to aid our understanding of whether or not something might be experienced as poetic. I have discussed the

use of language, including non-verbal languages particular to body-worn devices and systems, and the importance of considering action, transformation and ongoing narrative experience. I will now discuss the role of embodied engagement and how this might relate to, or shift, our perception of thresholds.

Mapping physical engagement

Physically-engaging works bring our attention, through our bodies, to pre-reflective or pre-verbal narrative relationships that may well operate in the vicinity of, and arguably take us beyond, the thresholds that separate the natural from the poetic. The question is, does this afford poeticisation of experience.
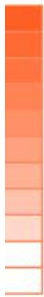
In *Eyes of the Skin*, the Finnish architect, Juhaani Pallasmaa, writes that poetry has 'the capacity of bringing us momentarily back to the oral and enveloping world', and that 'this re-oralised world of poetry brings us back to the centre of an interior world'. He interweaves the body, experience, language and poetics, acknowledging a threshold between oralised and pre-verbal relationships to existence, across which poetry can help us to move (Pallasmaa 2005). He talks about artistic expression as being engaged with pre-verbal meanings of the world, meanings that are incorporated and lived rather than simply intellectually understood. This parallels how he engages with architecture from a phenomenological perspective, assuming the role of the body as the locus of perception, thought and consciousness.

Pallasmaa speaks of a poetics of embodied experience – beyond, or perhaps on the threshold of, language, in the way that Bachelard speaks of poets and poetry in relation to language and being. Pallasmaa claims that existential understanding arises from our very encounter with the world, our being-in-the-world — it is not conceptualised or intellectualised, it exists in a pre-verbal space. In his writings, the role of the body and the role of artistic expression are foregrounded and founded on the belief that the great function of all meaningful art is to make us experience ourselves as complete embodied and spiritual beings. His theories support the notion of an implicit connection between the poetic and physical

engagement that responds to, reflects or embodies pre-articulated thoughts and perceptions in ways that are meaningful.

Martin Heidegger also refers to threshold occasions when discussing *poiesis*, but of a different order. Rather than thresholds between two states that co-exist, Heidegger speaks of thresholds between states that have a diachronic relationship. He illustrates this idea with naturally occurring events with which we are all familiar such as the blooming of a blossom, the coming-out of a butterfly from a cocoon, or the plummeting of a waterfall when the snow begins to melt. These moments are moments of transformation, when something actually transforms from its being as one thing into something completely different (Heidegger 1962; Brown 2003). All interactive works have, at their core, this potential for transformation, but this does not automatically make them poetic. As discussed above, a consideration of the interrelationships between action, transformation and ongoing experience is integral.

To understand what this might mean it is perhaps quicker to go to some examples. Assa Assuach's *My Trousers* (fig.1), is a pair of jeans that become a seat when you go to sit down *(Ashuach 2003)*. They have no visible mechanism. They simply lock into position. They thus transform the experience of inadequate seating into a cheeky and pleasurable, or simply satisfying, experience that engages the observer. The action of the wearer – to be seated where there is no seat – suggests to the observer that they themselves might desire a seat and may magically even be able to have one.

Brit Leissler's *Sole-on*-ice (fig.2) operates in a similar way. *Sole-on*-ice is a composite, wearable pair of 'sandal/frozen surface' objects that let you go ice-skating whenever you feel like it (Leissler 2007). By removing the need for sub-zero temperatures from ice-skating, the action is rendered magical. As with *My Trousers,* they make something impossible possible and may shift the "personal narrative" of the passerby as a result.

Mary Hale's *Monumental Helium-Inflatable, Wearable, Floating Body Mass* (fig.3), a pair of pants that inflate to release you from the pressures of gravity, moves into a more fantastical space (Hale 2008). Yet the observer still engages empathically as the desire to be released from the pressures of gravity (i.e.
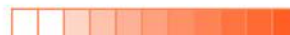
Figure 1: Assa Ashuach: My Trousers

Figure 2: Brit Leissler: Soul-on-ice

life) is strong. Our ability to imagine what it must feel like is afforded by the blissful look on her face as she floats in an impossible mass of air.

Finally, Joo Youn Paek's *Self-sustainable Chair*, (fig.4) combines the fantastical with an continuous, physically-embodied narrative. The *chair* is a dress that inflates as the wearer walks and becomes a seat for them when they get tired and need to sit down. However, when they sit the *chair* slowly deflates, requiring them to walk again (Paekyr, 2006).

All of these works are fundamentally transformative. They rely on human engagement and extend our notion of where the thresholds of natural and

Figure 3: Mary Hale: Monumental Helium-Inflatable, Wearable, Floating Body Mass

normal might lie. They surprise and delight and, I suggest, take us a step closer to arriving at an articulation of poetic. They can also be considered to be enchanting.

Enchanting

Jane Bennett describes enchantment as being 'both caught up and carried away'. She suggests that the disorientation involved is associated with a pleasurable sense of fullness and liveliness that charges attention and concentration. The combination of emotional attachment and a sense of something "not yet understood" leaves us feeling disrupted but also attentive and curious (Bennett 2001). McCarthy states that 'when it comes to experiences such as enchantment feelings are as important as thoughts,

Figure 4: Joo Youn Paek: Self-sustainable Chair

sensation is as important as cognition, and emotional consciousness is as important as will.'(McCarthy 2006). I suggest that an evolving, physically-engaged narrative that gives poetic form to the imagination and is presented through performative means can be enchanting.

The Performative

All of the works discussed in this article are performative in nature. Susan 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 (Kozel 2008). In the *Swing That Thing…* research, performance is consciously used as a catalyst for bringing awareness to shifting relationships to the body in space. The works, discussed below, engage wearer and observer in an ongoing, evolving process of creation, reflection and construction, as a direct result of interaction between body movement and the effects of technology. I believe this supports the notion that extending the body with technology is a valid approach to poeticising experience when focused on extension and movement.

Extension

The ability of technology to extend the way we see, imagine and experience the world was perhaps most powerfully posited by Marshall McLuhan when he wrote 'All media are extensions of some faculty – psychic or physical… The wheel is an extension of the foot. The book an extension of the eye. Clothing an extension of the skin. Electronic circuitry an extension of the nervous system.' (McLuhan 1964).

The *Swing That Thing…* project focuses on extending the body through the use of digital and electronic technologies. The investigation is principally concerned with embodied experience so the broader framing of technology provided by McLuhan is highly pertinent. It is perhaps important to note, however, that McLuhan preaches caution. Heidegger suggests that if we take a sympathetic or poetic approach to technology, we can reveal an inherent beauty in the medium (Heidegger 1977). If the media in question are technology and the body, might taking an embodied, expressive and poetic approach when applying technology to the body reveal an inherent beauty in both the technology and the body, and also circumvent the need for caution?

Mechanical, or tangible extension is a powerfully direct way to raise and explore questions about movement, body dynamic and our fundamental embodied states. Leigh Bowery, Rebecca Horn and Kei Kagami provide us with subtly different examples of mechanical extension (fig.5) (Bowery and Greer 2005, Zweite et al. 2007, Kagami 2006).
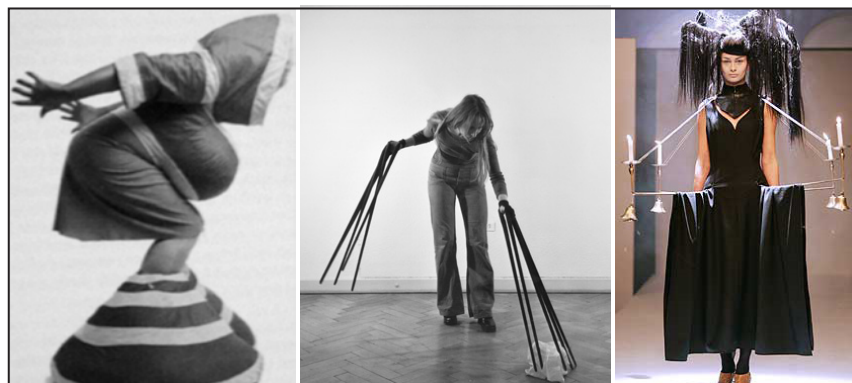
Figure 6(above): (a-b) Macel.lí Antunez, (c-d) Stelarc
Figure 5 (left): (a) Leigh Bowery, (b) Rebecca Horn, (c) Kei Kagami

Surprisingly, there has been little focused exploration of mechanical extension in the field of body-worn devices and systems. Marcel.lí Antunez's and Stelarc's cyborg-like extrusions (fig.6) provide notable exceptions (Antunez 1998, 2003; Stelarc 1996 -). My investigation has more in common with Horn, Bowery and Kagami's body-centric approach than with the "cyborg discourse" commonly marshaled in response to Stelarc and Antunez's work (Harraway 1991; Munster 2006). However, it is important to note that all seem to be addressing the relevance of reassessing our corporeality by extending it spatially in different ways.

Extension in Theatre, Performance and Art

In theatre and performance research, there has long been interest in the idea of extending, as well as in distorting or shifting perspective of gesture in order to focus attention. According to Anne Bogart, Agnes de Mille described the use of distortion, or what she called "turning", in dance, for example, as the extension of effort, the prolongation of stress beyond the norm, saying that it can be arresting or remarkable, and it can help fix a gesture in memory (Bogart 2001). Russian formalist, Victor Shklovsky, wrote that everything around us is asleep and that it is the function of art to awaken what is asleep, to "turn" it slightly until it awakens (Shklovsky 1965). Brecht in his articulation of *Alienation* developed theories about making the strange familiar and the familiar strange saying 'What is "natural" must have the force of what is startling. This is the only way to expose the laws of cause and effect.' (Otto 1964).

Movement, Magnification and Control

Extending the body amplifies, so brings to light details that might otherwise escape attention. The dynamic capabilities and nuances of the moving body are largely overlooked in everyday life as well as in the design of many body-worn devices. Yet moving can feel good and is essential to life, and bringing our attention to the nuances of our moving body can enchant, and render our ongoing actions poetic.

The practical outcomes of *Swing That Thing…* each provoke, require or inspire through different kinds of extension. Many of the works

focus on core-body engagement, and the positive feelings and other repercussions of such engagement. Moving the core of our body is radically different to moving our digits or limbs – it requires and affords a different kind of attention because of the different resolutions of awareness and control.

In general, people have very low resolution control in the core body, but we have incredible dexterity in our fingers and hands. If we manipulate an object in our hands, our actions can be efficient and graceful. Yet such fine motor control normally requires our focus to be directed away from our bodies. If we focus on what our fingers are actually doing, our attention can be caught in the minutae of movement and the task can suffer.

The control we have of our core body is coarser, often far clumsier, than the control we have of our fingers. It can require a person to focus their attention on their body more so than on the task at hand. When our physical core is a fundamental aspect of engagement, our attention may shift between the body, gesture/s and the affects of physical engagement. Our embodied-ness is necessarily implicit in the experience.

Seeing fine control as the most positive kind of engagement we can undertake overlooks the possible value of full body, even clumsy, interaction. It is as limited as striving for complete efficiency to create a better world. *The Swing That Thing...* research project, therefore, focuses on core- and full-body interaction.

Figure 7 shows a number of devices that share a similar focus on fully engaged core-body movement: a hula hoop, Rinotchild's *Laughing Swing, and* Bernie Lubell's *Cheek to Cheek*. The *hula hoop* is familiar to most people from their childhood, or from the circus. It is considered, and often remembered as a fun toy that requires core-body, engagement.

Laughing Swing is a modified swing that turns swinging into an enchanting and engaging feedback loop. As the person on the swing moves, the swing seems to laugh. The higher they swing the more wildly it laughs, creating a feedback loop through the body as person swinging laughs too (Rinotschild 2005).
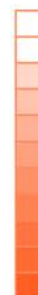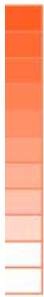
With *Cheek-to-Cheek* the user sits on a stool that is connected with pneumatic tubing to a headpiece. By moving their buttock cheeks, the participant inflates cushions that are held in place against their facial cheeks. When one buttock cheek moves, one of the facial cheek cushions is momentarily filled with air. The relationship is very direct and creates an intimate feedback loop in the body (Lubell 1999).

Grace Kim's *Twirl Skirt* extends these ideas into a fully wearable space. *Twirl Skirt* has three electro-luminescent panels that illuminate in reaction to how fast the wearer is spinning. It seems to inspire people to spin and twirl in ways that they usually haven't since they were children through the coupling of visceral pleasure with feedback regarding the velocity of the wearer's spin (Kim 2005).

Each of these works bring attention to our bodies in different ways, and the nature and quality of immersive experience resonates strongly with the *Swing That Thing…* suite of works.

Poetic

If we distill the above discussion we can list a series of criteria that can help us to ascertain if a body-worn work might be considered poetic. For example:

*Figure 7: (a) Hula Hoop, (b) Rinotchild: Laughing Swing,
(c above) Bernie Lubell: Cheek to Cheek*

- If a body-worn device or system uses the various languages at its disposal — form, texture, colour, time and movement; as well as fashion, technology, architecture, performance and interaction design — for their aesthetic and evocative qualities in addition to, or in lieu of their ostensible meaning, the works can be poetic.

- If action, transformation and ongoing narrative experience evolve in ways that are surprising, unexpected, less than obvious, indirect, to result in the kind of suggestion, allusion, signification, juxtapositions and slippages that support multiple interpretations, such works can generate poetic experiences.

- If the works bring attention to the body in unusual or unexpected ways, so bring to light aspects of our embodied-ness that would otherwise be overlooked this can be poetic.

- If works physically engage us in pre-reflective or pre-verbal narrative relationships that operate in the vicinity of, and help us navigate synchronic or diachronic thresholds this can be poetic.

- If they enchant us and make us experience ourselves as complete embodied and spiritual beings by responding to, reflecting or embodying pre-articulated thoughts and perceptions in ways that are meaningful, this can be poetic.

- If the works extend the way we see, imagine and experience the world by bringing attention, or awareness to shifting relationships to the body in space; or if they engage wearer and observer in an ongoing, evolving process of creation, reflection and construction, as a direct result of interaction between body movement and the effects of technology, this can be highly poetic.

- If works foster new physical states and levels of conscious awareness to shift the way we see, imagine and experience our embodied-ness; if they awaken what is asleep, to turn it slightly until it awakens; if they render something startling; make strange; bringing to light details that might otherwise escape attention; they can be poetic.

These criteria help us to analyse why we might consider, or experience a work as poetic. I will use them to examine the different works in the *Swing That Thing…* research project, in order to try to understand if and how they might poeticise experience.

Swing That Thing…: hipDisk and the hipdiskettes

hipDisk is a wearable self-contained sonic output system for performance and play that exploits changing relationships between hip and torso to actuate simple tones. By physically and visually extending the body the interface enables a sonic extension and demarcation of gesture. The *hipDisk* demands an inordinate amount of effort to play, and extreme effort results in comparatively feeble sound output – tones that are unrefined, electronically primitive, harsh, reedy and unsophisticated. The inherent contradiction seems to be both humorous and engaging, and is further augmented by the lack of restraint shown by the wearer as they put their body into bizarre positions in order to hit the notes. The disks' horizontal extensions of the body also cause us to look at the body in new ways. (Wilde 2007-). Composition is not normally choreographic. However it's not possible for someone wearing the *hipDisk* to play a note without moving. *The hipdiskettes* are a group of *hipDisk*-ed performers that multiply the *hipDisk* though time and space. Doing so amplifies the interconnection between choreography and composition, inherent to the *hipDisk*. It also allows more complex sound to be created than a single *hipDisk*-ed performer can achieve alone.

The interface, whether used alone or by ensembles such as *the hipdiskettes,* provides a startlingly different view of the body and provokes new ways of moving. It also promotes different kinds of interaction between multiple wearers, socially engaging them in unexpected ways. Changing the way we use and see the body affords new ways of thinking about the body. It provokes reflection upon new modes and patterns of bodily experience. It allows us to enter and experiment with non-verbal relationships to space and sound and allows us to consciously engage with these elements. In the case of *hipDisk,* this is facilitated by the interaction between body-movement, the disk interface, and the sonic output. The *hipDisks* thus can be said to support a poetic extension of the dynamic moving body, in accord with the proposed definition.

Figure 8: (a. above) hipDisk, and (b, top right) The hipdiskettes

Swing That Thing…: Gesture≈Sound Experiments

The *gesture≈sound* experiments extend the body with sound to mesh physical with sonic composition. The aim was to support a kind of kinaesthetic-auditory synchresis[2], where sound production becomes an inherent and unavoidable consequence of moving the body. The desire is to engage wearer and observer in a fluid experience of the relation between gesture and sound (Wilde, 2007).

Gesture≈sound extends the body sonically, but not mechanically – the sensor system is worn discretely on different parts of the body depending on which sound patch is being used. This is a major point of difference with the *hipDisk* not just visually, but also experientially. The participant in *gesture≈sound* is

Figure 9: gesture≈sound experiments

allowed total freedom of movement. They can interact with and respond to the soundscape they are generating and affecting in whichever way they choose. Another fundamental difference between this work and the *hipDisk* is the quality of sound output. *Gesture≈sound* uses complex, high quality algorithmically-generated sounds as opposed to crude, poor quality tones. Finally, unlike *hipDisk, gesture≈sound* is not an inherently humorous work.

The different *gesture≈sound* patches each afford different kinds of physical engagement. In every case the coupling of gesture to sound, sound to gesture brings the performer into their bodies and encourages them to explore and extend the range and quality of their movement. This affords a deeper, more reflective engagement as well as a different
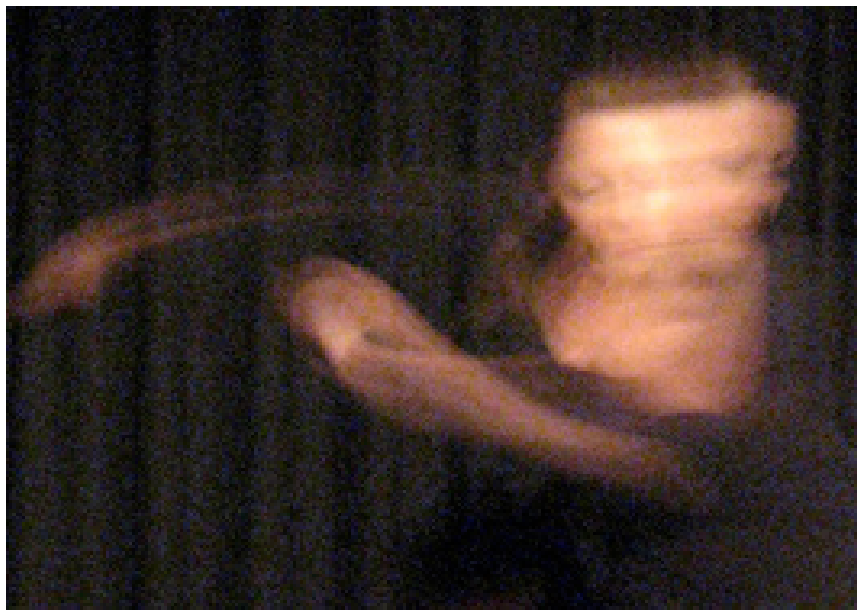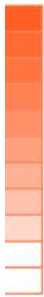
Fig. 10: a gesture≈sound experiment

kind of playfulness, leading to different qualities or aspects of poetics and poiesis,. Whether or not the resulting performance is poetic depends on a range of factors, nonetheless there seems to be poetic potential in this performative context as wearer and observer engage in an ongoing process of creation and reflection.

Swing That Thing…: Light Arrays

The *Light Arrays* are a modular system that supports a range of gestural explorations. They are not interactive per se, they simply extrude from the body to provide a visible and seemingly tangible extension that doesn't interfere with movement. The *Light Arrays* exaggerate the affects

Figure 11: a range of stills of the Light Arrays

of movement, so elucidates through magnification. By extending the body with light, the way the body is viewed is shifted, allowing access to the inherent beauty of the body in motion. Gestures and postures are refracted out into the space, allowing the observer to see how a performer's movement physically impacts space and how the different parts of their bodies interact with each other (and others) in the shared environment. Just as Merleau-Ponty claims that the paintings of Cézanne 'make visible how the world touches us' (Merleau-Ponty 1962), *Light Arrays* make visible how our gestures touch the world.

In *Body, Memory and Architecture*, Kent Bloomer and Charles Moore explain that what is missing from dwellings today are the potential transactions between body, imagination and environment (Bloomer
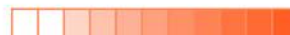
and Moore 1977). *Light Arrays* provides a way of thinking about these transactions from an experiential, as well as visual, perspective. They allow wearer and observer to enter, understand and experiment with relationships to space. This evolving process engenders a collaborative construction of new physical states and levels of conscious awareness. Although the performer is immersed in a broader visual dynamic which they can't see in its entirety, as a viewer can, performers who have used the system to date all state that the interface engages them in a process of creation and reflection on new modes of bodily experience that they experienced as highly poetic.

Swing That Thing…: hipDrawing
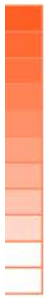
hipDrawing is a body-worn system that includes a garment and projection wall that combine to turn the wearer into a "human Etch A Sketch". The work is inspired by Ohio Art's iconic children's drawing tool (Fig.13) (Ohio Art). Unlike a traditional Etch-A-Sketch where you turn dials to draw on a 2-dimensional screen, *hipDrawing* allows the wearer to trace lines with their hips through space and these movements are represented in real-time on the projection wall. Up to three people can use the installation at any one time - *hipDrawing* together or in tandem, erasing their individual lines by shaking their bodies up and down just as they would shake the traditional Etch-A-Sketch screen to erase their line and start anew. The aim of *hipDrawing* is to encourage people to experiment and explore. The intention is to inspire them to move outside of their usual performative comfort zone, to go beyond self-censorship, to experience how it feels to extend themselves physically and perhaps move in new ways. Wearers of the body-worn device swing, shake and shimmy in strange and undignified ways. Their unselfconscious actions are motivated by the desire to draw and to see their hip movements made concrete. The work brings attention to the body in unusual or unexpected ways, so bring to light aspects of our embodied-ness that would otherwise be overlooked. *hipDrawings* physically engage us in relationships that operate in the vicinity of, and help us navigate, synchronic or diachronic thresholds.

hipDrawing engages both wearer and observer in an ongoing, evolving process of creation, reflection and construction of the body as a direct
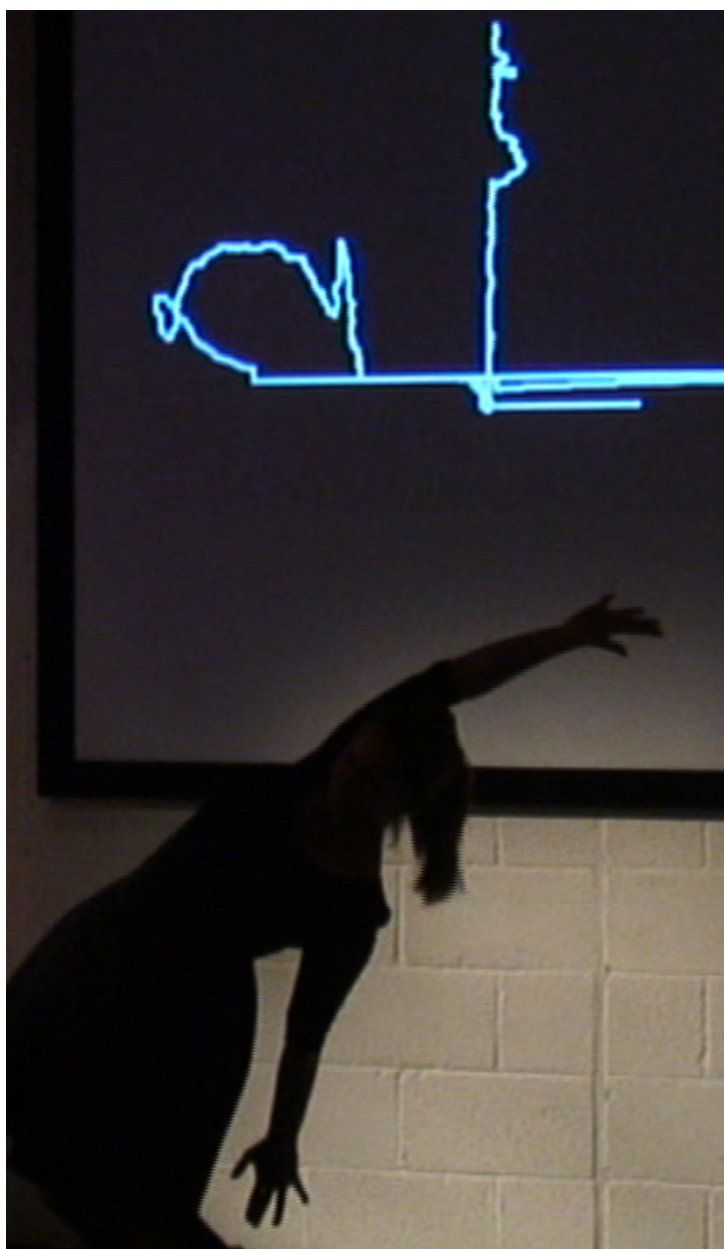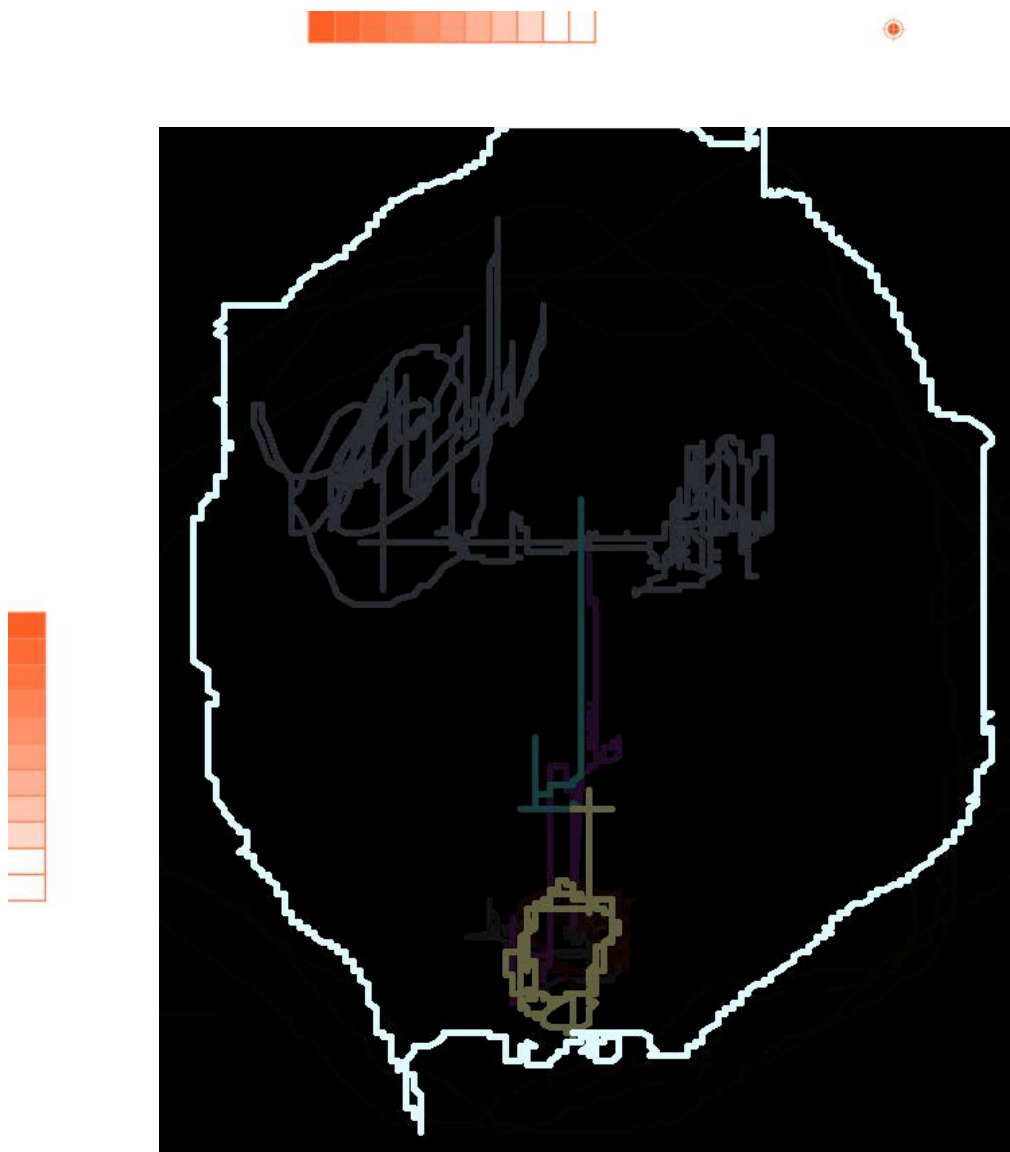
Figure 12: hipDrawing in action

result of interaction between body movement and the effects of technology. The work fosters new physical states and levels of conscious awareness, and the resulting drawings shift the way we see, imagine and experience our embodied-ness by turning it slightly, making it strange, bringing to light details that might otherwise escape attention. The work therefore can easily be considered to be poetic. Like *gesture≈sound*, however, any performance made with *hipDrawing* has poetic potential, but ultimately
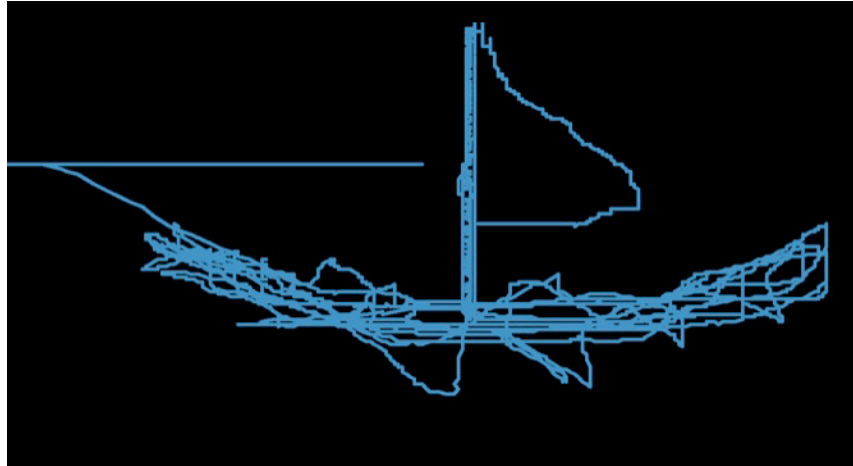
Figure 12: (b left) a hipDrawn face, (c above) a hipDrawn boat

depends on a range of factors including the specific performer's gestures, sounds and structure.

Discussion

The *Swing That Thing…* works cited were created with the express intent of providing an "open space" for corporeally-driven expression through a particular technology. Measuring the success of these interfaces could be done through a combined analysis of temporal engagement and of the evolution of the wearer's performance. If the wearer of the body-worn device were to remain engaged for extended periods of time and if their expressive output evolved, it would suggest that they were fulfilling their purpose.

If a body-worn device fulfills any of the criteria for "poetic" asserted in this article, it can be considered to have poetic potential. Whether or not the work realises this potential depends on the nuances of the relationships between the different criteria. When Stewart states that thresholds are fluid and mutable, and that where the threshold between natural and poetic language lies must be assessed on a case by case basis (Stewart 1993). I believe this is also true of body-worn devices and embodied poetics.

Each of the works discusses engages both wearer and observer in an evolving process of creation of new physical states and levels of conscious awareness, as a direct result of interaction between body movement and the technology. This suggests that extending the body with technology is a valid approach to poeticising experience and extending our expressive potential. This outcome, though, cannot be assumed. Further work is needed to articulate how to achieve poetic outcomes.

Future Directions

The *Swing That Thing: moving to move* research project includes other works that are in development. *vibroBod* is a hip-controlled human wire-and-loop game that extends the body virtually, through vibration. *the OWL project* is a series of soft prosthetics that physically extend and deform the body in an attempt to generate magical thinking, and plumb people's willingness to imagine through the body in movement. The *Light Arrays* is also being developed as a suite of garments for performance, play, rehabilitation and disability support. Together the suite of works affords an extended examination of the poetic potential of technological extension. When the project is complete the author will be better placed to finalise an articulation of the concerns raised in this article.

Acknowledgements

Biography

Danielle Wilde is an artist, performance maker and design researcher. She has an MA in Interaction Design from the Royal College of Art in London, and is currently completing a practiced-based PhD at Monash University and CSIRO in Australia, investigating how pairing technology with the body might extend our poetic and expressive potential. Her work is supported by a number of organisations and institutions and has garnered numerous awards. Wilde publishes extensively and exhibits and performs her work internationally on a regular basis. Further information is available at *http://daniellewilde.com*
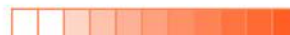
Endnotes

1. Importantly, this is not to be confused with Jean Baudrillard's discussions of simulacra, where images and objects can be artificial placemarkers for the real; where distinctions between representation and reality can break down; and where language is used to obscure rather than reveal (Baudrillard 1985). Poetic language relates more closely to phenomenological discourse.

2. As in Michel Chion's idea of synchresis: "synchresis (a word I have forged by "combining synchronism and synthesis) is the spontaneous and irresistible weld produced between a particular auditory phenomenon and the visual phenomenon when they occur a the same time. This join results independently of any rational logic." (Chion, 1994: 63)
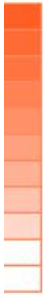
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