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The Implicit Body

Understanding Interactive Art Through Embodiment and Embodiment Through Interactive Art



*Figure 1, Nathaniel Stern scanning water lilies
documentation of Compressionism, a performative printmaking process
Emmarentia Park, Johannesburg, South Africa; photo by Nicole Ridgway*

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PHD Dissertation

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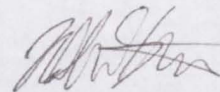


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Declaration

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Summary

This dissertation argues that examining interactive art and embodiment, together, enables an expanded understanding of the two. It puts forward a theoretical approach, as well as a critical framework, for doing so.

The hypothesis of this approach contends that present discourses surrounding digital art have been too rooted in paradigms of linguistic and visual signification to adequately interrogate the complexities of interactive art. They see such work as primarily language-, image- or object-based, rather than as requiring the physical activity of a viewer-participant in order to be fully realized. Digital art is not, as extant theories suggest, located merely in that which can be observed.

Contemporary theories of embodiment and relationality that have grown out of phenomenology, by contrast, see body and world, subject and object, person and people as always already entwined, always already implicated across one another. They are constituted, and differentiated, only in their togetherness, in their inter-activities. This dissertation maintains that the best approach to studying interactive art is one which is sensitive to such an understanding of (co-)emergence. Essentially, it argues, embodiment *is* interactivity, *is* how bodies relate. An 'implicit' body, it goes on, is in the process of being formed, is per-formed (not pre-formed). Interactive art is enacted at the meeting of the art object and a participating subject; embodiment is central to interactive art, and interactivity is central to the process of embodiment. Analysing the two, together, has the potential to bring insight into each, as well as what is at stake in their openness.

The dissertation begins with close readings of three contemporary critics of digital art: Lev Manovich, Oliver Grau and Christiane Paul. It shows how their contributions to the field fall short when applied to interactivity. It then turns to similarly close readings of contemporary media theorists such as Mark B.N. Hansen, N. Katherine Hayles and Brian Massumi in order to suggest a reinvestment in the body in digital realms. Finally, it looks to performance studies and phenomenology, most specifically Rebecca Schneider and Maurice Merleau-Ponty, to construct an approach to interactive art which is focused on interventions in the body's performance.

The dissertation then proposes a concrete critical framework for examining interactive art and embodiment. This concentrates on four key areas when critiquing a

given work: artistic inquiry and process; artwork description; inter-activity; and relationality. The argument here is that traditional readings of digital art and new media stop after the first two areas of concentration. In the case of interaction, most writing on interactive art will explain that a given piece *is interactive*, and *how it is interactive*, but not *how we interact*. This is essential to the understanding of the viewer-participant (performer) as integral to the work of art. In the case of relationality, this dissertation contends that interactive art enables participants to explore, with their bodies, physical-conceptual relationships such as those between bodiliness and space or embodiment and meaning. How, in our interactions, does the process of embodiment relate to, for example, architecture or language? How does the ongoing formation of each influence and enact the ongoing formation of the other? What do we learn about embodiment and interactivity through these infolding relationships?

What follows is an in-depth analysis of said framework, along with the art works it examines. The dissertation will, for example, turn to the writings of contemporary philosopher Jean-Luc Nancy to understand the emergent relationships between embodiment and language, and then the art works of both Camille Utterback and Simon Penny in order to explore those relationships, materially. It understands the co-originality of body and society through modern sociologist Nick Crossley, then turns to the art of Mathieu Briand and Scott Snibbe to analyse how each is actively constituted of their relation.

The dissertation then visits my own practice as an artist in the studio, delving into practice as research as thinking – all embodied processes. Here an/other form of case study explores the understanding of interactive art through embodiment, and vice versa, within the production of interactive art itself. And the thesis concludes with less intensive and more extensive studies of a range of digital art works over the last decade, showing how an implicit body approach can benefit not just interactive art, but the broader fields of new media and art criticism at large.

Ultimately, this dissertation contends that contemporary, interactive art is reconfiguring action and perception in ways that amplify bodiliness. It gives one potential mode of thinking through interactivity, and shows its practical application towards furthering the fields of contemporary art criticism, creative production, and public discourse about the body more generally.

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1 Introduction

This dissertation argues that interactive art and embodiment should be explored and examined together, and puts forward a theoretical approach, as well as a critical framework, for doing so. It gives one potential mode of thinking through interactivity, and shows its practical application towards furthering the fields of contemporary art criticism, creative production, and public discourse about the body more generally. Ultimately, this dissertation contends that contemporary, interactive art is reconfiguring action and perception in ways that amplify bodiliness, and that re-looking at both embodiment and interactivity, together, enables an expanded understanding of the two.

Following this introduction, Chapter 2, "Seeing, Looking and Being Bodily," will demonstrate, through a close reading of key theorists and scholars, how contemporary theories of digital art and new media (the broad genres under which interactive art falls) are inadequate for the proposed advancement of embodiment and interactive art discourses. This dissertation uses a loose definition of digital art, proffered most succinctly by Christiane Paul: digital art is work that uses any form of computer technology either as a tool for production – ending up, for example, as a digital print or fabricated sculpture – or as a real-time medium where the piece is stored and presented in a digital format – such as interactive software that plays sound or Internet art we see on a screen (Renderings 471-472). The field of new media here refers to discourses surrounding technologies of the moment – the word 'new' is, after all, a relative term. In the past, the category of new media has referred to, for example, video or electronic music, while it is currently applied to computer technologies and the Internet.

Chapter 2 first argues that discussions of digital art have been too rooted in the paradigms of linguistic and visual signification to adequately interrogate the complexities of interactive art. Here interactivity is understood as the required physical activity of a viewer-participant in order to fully realize a work; interactive art is enacted at the meeting of the art object and a participating subject, thus embodiment is at its core. This chapter turns to writings by Lev Manovich, Oliver Grau and Christiane Paul to show that approaches to contemporary digital art have tended to see such work as primarily language-, image- or object-based, and thus situate the locus of understanding in semiotics, vision or form. It contends that this kind of approach ignores the viewer-participant as integral to the work, and instead proposes an understanding of interactive art along with its embodied interactor. This new approach should focus on the centrality of the kinaesthetic, recognizing that the ongoing inter-active relationships between a moving

body and responsive environment or software are precisely where the art work happens. Digital art is not, as extant theories suggest, located merely in that which can be observed.

The chapter then goes on to explore how, historically, both the act of looking itself, and the broad category of new media, have been largely (mis)understood as disembodied or disembodiment. It turns to the writings of contemporary media theorists such as Mark B.N. Hansen, N. Katherine Hayles and Brian Massumi to show where this misconception comes from, and why its dominant status is flawed. The chapter concludes by calling for an approach to new media, and digital art, that engages with interactivity as inherently embodied, and bodiliness as inherently interactive. Chapter 3, "The Implicit Body," answers this call by revisiting both the body and interactivity in depth.

Chapter 3 begins by distinguishing between static, essential and material readings of the body, and dynamic, relational and affective ones. It draws on the writings of phenomenologist Maurice Merleau-Ponty (as well as contemporary cultural and media theorists who follow on his work) to show the difference between a language- and image-based view of the body as an independent external thing – what Merleau-Ponty calls the 'body-image' – and a body which is continuously constituted through its enactive interrelationships with the world – his 'body-schema'. This is a heuristic, rather than absolute, distinction; neither the body-image nor body-schema can exist without the other. The conception of the body-schema, however, allows us to rethink bodies as formed through how we move in, and relate to, our surroundings. In such a rethinking, this chapter argues that embodiment is a process, *is* inter-activity: bodies emerge from the space of interactive relation. Following on from Merleau-Ponty et al, Chapter 3 avers that embodiment is not a pre-formed thing, but per-formed and incipient action. It uses ideas from performance studies to assert that the body-schema and body-image, our interactions with the world and how we read them, perpetually feed back in to their own ongoing performance.

The chapter then brings this understanding of the performed body into the realm of art. It first contends that the 'explicit body' deployed in feminist performance art is an exemplary intervention in the body-image, and then asserts that interactive art is uniquely positioned to intervene in the body-schema. Performance studies scholar, Rebecca Schneider, initially proposed that the explicit body in performance challenges the symbols and structures, language and images, we inscribe on and attribute to the body. By contrast, this chapter argues that interactive art stages an implicit body, which implicates,

enacts, draws out and intervenes in the *process* of embodiment. The remainder of this chapter further develops this thinking of 'the implicit body' using it towards a theoretical approach to interactivity and embodiment, together, through a detailed discussion of performance and relationality.

In Chapter 4, "A Critical Framework for Interactive Art," the theoretical approach for the implicit body is turned into a critical framework and, through an intensive reading of one artist, is applied to a case study. The implicit body framework proposes a concentration on four key areas when critiquing a given work: artistic inquiry and process; artwork description; inter-activity; and relationality. The argument here is that traditional readings of digital art and new media stop after the first two areas of concentration, and that it is the latter two which enhance understandings of both interactive art and embodiment. In the case of interaction, most writing on interactive art will explain that a given piece *is interactive*, and *how it is interactive*, but not *how we interact*. This is essential to the understanding of the viewer-participant (performer) as integral to the work of art.

In the case of relationality, Chapter 4 maintains that interactive art enables participants to explore, with their bodies, physical-conceptual relationships such as those between bodiliness and space or embodiment and meaning. How, in our interactions, does the process of embodiment relate to, for example, architecture or language? How does the ongoing formation of each influence and enact the ongoing formation of the other? What do we learn about embodiment and interactivity through these infolding relationships? This chapter argues for, and begins, an ongoing list of what this dissertation calls implicit body 'thematics,' relational couplings between embodiment and varying activity-based themes ("sensible concepts") often found in contemporary interactive art. Each implicit body thematic aims to highlight specific interactive relationships such as those posed above (with space or meaning), in order to explore embodiment and interactivity more in depth. Like the body-image and schema, implicit body thematics are approaches utilized within the larger framework to accent and examine the ways interactive art intervenes in embodied performance. The chapter concludes with a case study of artist Rafael Lozano-Hemmer in order to show the proposed framework's effectiveness in facilitating a more thorough investigation of embodiment and interactive art.

Chapters 5 and 6 go on to discuss, in great detail, a small selection of interactive artists and art works, each chosen because of their exemplary activation of the implicit

body, and their widely recognized contributions to the field of digital art at large. These intensive case studies show how the implicit body framework furthers understandings of both interactive art and embodiment, and will concentrate on two proposed implicit body thematics: Body-Language and Social-Anatomies, respectively. The Body-Language thematic asks us to concentrate on the co-emergent relationships between the performance of embodiment and the process of meaning-making. Exemplified by case studies on the work of Camille Utterback and Simon Penny, this thematic attempts to examine the feedback loops between text and activity in interactive art. The Social-Anatomies thematic analyses how interactive art can invite participants to explore both embodied performance as governed by societal rules, and the social role that embodiment has to play. Here art works by Mathieu Briand and Scott Snibbe are studied as interventions in a process of embodiment that is understood as always collaborative.

Chapter 7, "In Production (A Somewhat Autoethnographic Experiment)," is an/other form of case study, one that explores the understanding of interactive art through embodiment, and vice versa, within the production of interactive art itself. Here, my own continuous process of making interactive and digital work becomes a somewhat fictionalized but rigorous story about performance and relationality. I argue for arts production as research, and that an experimental form of narrative inquiry is the best way to examine the implicit connections that are made in the studio. This chapter uses affirmative methods of creative and scholarly writing to reveal the practice-based and practice-led research and processes that led to the implicit body concept and continue to inform, perform and transform its articulation as an approach and framework. Following said approach, my writing in this chapter places emphasis on interactive art and embodied relationships in order to better understand both.

Chapter 8, "Implicating Art Works," revisits the discourses first put forward in Chapter 2. It explicates how the implicit body framework for understanding embodiment and interactive art might positively feed back in to the fields of new media at large, and digital art more specifically. It highlights a small number of contemporary digital art works that would not be understood as interactive through the definition put forward in this introduction, but whose critique still gains from an implicit body approach. Dubbed "potentialized art," these works invest in and/or explore interactivity and embodiment, affect and sensation, relationality and performance, even though audience interactivity is not essential to their existence.

The dissertation concludes with a summarization of its contributions to embodiment and interactive art discourses. It also begins to gesture towards how the implicit body concept, approach and framework might continue to be used in order to grow understandings of embodiment and interactivity beyond the confines of this text, in contemporary arts production, research, writing, critique and criticism.

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2 Seeing, Looking and Being Bodily

2.1 Introduction

In a 2002 issue of the *Leonardo* journal, Lev Manovich rightly asserts, "No critical text on digital art has achieved a familiarity status that can be compared with the status of classic articles by Clement Greenberg and Rosalind Krauss (on modern art), or Andre Bazin and Laura Mulvey (on film)" (Key Texts 567). His argument is that there is no book that outlines the overarching themes, mechanisms, forms, strategies and concepts explored in digital art, no theorist or article we can point to that captures and summarizes the work of the moment. He further declares that the texts that do attempt to capture this zeitgeist are most often "positioned within the familiar and well-rehearsed narratives and categories of standard 20th century art textbooks" (Manovich, Key Texts 568). They are trapped in discussions which do not recognize what is 'new' in the new media being used, too focused on what came before, mapping out the trajectories of 'old' media. As such, Manovich attests, digital art is "neutralized, diluted, and rendered harmless" (Key Texts 568). He contends that it is seen merely as an extension of particular visual art genres like photography and video, rather than being critiqued with a recognition of the new properties (he calls them principles) it holds. We must approach digital art with an eye on continuous changes to the art object and how we understand it.

Manovich's article attempts to provide readers with a stitched together discourse for digital art by naming ten books that could be read as a group to construct an inclusive picture of this larger zeitgeist,¹ and it coincides with MIT Press' publication of his book, *The Language of New Media*. This seminal work in the field was a significant and effective attempt to fill the critical void he argued had neutralized new media and digital art. What becomes evident as early as his title and introduction, however, is that Manovich is also guilty of locating his framework for understanding new media within well-rehearsed narratives and categories: those of language and visuality. His central argument that "the visual culture of a computer age is cinematographic in its appearance" (Manovich, LNM 180) demonstrates an unbreakable commitment to reading digital art through the lens of filmic image-making and visual semiotics.

¹ Aptly titled *Ten Key Texts on Digital Art: 1970-2000*, this article provides a kind of "hypertext" to tie together disparate histories of new media (Manovich).

This chapter pivots off of Manovich's argument to show that, while invaluable in laying a groundwork for unpacking digital art in terms of its historical antecedents and relations to culture at large, such a general approach is both too broad and too rooted in linguistic and visual signification to adequately address the more specific issues being raised by interactive art (a sub-genre of digital art). The chapter develops this argument through a close reading of texts by Manovich and two other digital art theorists, Oliver Grau and Christiane Paul, and shows how the work of all three is deficient when used for thinking through interactivity, in that they lack the necessary focus on the embodied viewer-participant.

As a parallel to the inadequacies digital art theories present, the chapter then turns to scholars outside of contemporary art to show that discourses of *disembodiment* have historically dominated (and distorted) the field of new media at large. In exploring the misconception of disembodiment in, and of, new media, it reasserts the role of the body in the act of looking, which plays a central role in understanding the embodied viewer-participant. The chapter turns to cultural studies academics such as Mark B.N. Hansen, N. Katherine Hayles and Brian Massumi to argue for active and embodied looking, the materiality of data, and the process of embodiment as not only engaged but amplified through interactive art and the new media it uses. In all, this chapter argues for more specificity in understanding interactive art, and contends that this specificity can be best found through a rethinking of the body and embodiment.

Pioneering interactive art- and technologist David Rokeby, who has been working in the field since the early eighties, exemplifies the need to understand interactive art outside of a linguistic and visual semiotics.² His work demands that we investigate the possibilities it opens up with regards to embodiment and interactivity. Rokeby believes that rather "than creating finished works, the interactive artist creates relationships" (Transforming 152) between viewer participants and an ongoing work. He does not make images for us to watch, but systems that we must explore with our bodies. It is worth quoting a section of Rokeby's artist statement for *Very Nervous System* (1986-1990, see Figure 2, page 9) at length here:

² With regards to technology, Rokeby's most notable contribution is the analogue sensor and microcontroller-based vision system Rokeby originally created as hardware for the work discussed in this chapter, *Very Nervous System*. He later produced a computer vision software version, which was not only used in his own work, but made available as a distributed package (called 'softVNS') for other artists to create interactive art with. Rokeby continues to update and sell this package.

I created the work for many reasons, but perhaps the most pervasive ... was a simple impulse towards contrariness... Because the computer is purely logical, the language of interaction should strive to be intuitive. Because the computer removes you from your body, the body should be strongly engaged. Because the computer's activity takes place on the tiny playing fields of integrated circuits, the encounter with the computer should take place in human-scaled physical space. Because the computer is objective and disinterested, the experience should be intimate. (Rokeby, VNS)³



*Figure 2, interacting with outdoor and indoor installations of David Rokeby's Very Nervous System, 1986-1990
Interactive Installation and Software, dimensions variable*

This piece uses “video cameras, image processors, computers, synthesizers and a sound system to create a space in which the movements of one's body create sound and/or music” (Rokeby, VNS). Rokeby's viewer-participants might look to outsiders like they are dancing to a strange sonic composition, but they are actually creating sounds in a real-time, response-driven environment, which uses generative feedback loops in order to guarantee both a non-repeatable experience and non-repeating musical scores. He turns the body into an improvisational jazz instrument; it is through their interaction that “the ‘spectator’ is more than a participant, [in that they become] both participant in and creator of the simulation” (Stone 112).

Rokeby explains that *Very Nervous System* asks the body to respond “more quickly than consciousness does” (Rokeby and Cooper, *Wired Interview*). It alters not only

³ Video online at <http://homepage.mac.com/davidrokeby/vns.html>. For similar works by Rokeby see *Watched and Measured* (2000) and *Taken* (2002) online at <http://homepage.mac.com/davidrokeby/installations.html> (Rokeby, *Installations*).

how we experience and use our bodies while within its space, but also afterwards. After prolonged interactions, we expect every-thing to change through how we move in relation to, and engage with, it. The piece activates an embodied exploration of the world and a sensuous exploration of our own bodies. He explains, "I'll put on a CD, and when I make a sudden movement, I feel cheated that the music on the disc hasn't changed to mirror my gesture. So, yeah: It does alter you. You expect the whole world to be interactive" (Rokeby and Cooper, *Wired Interview*). In other words, the interactivity in Rokeby's *Very Nervous System* reconfigures not only the relationship between artwork and participant, but also between perception and action; it amplifies our bodiliness, how it relates to the world and its inherent inter-activities. Exploring this reconfiguration, amplification and relationship, looking again at embodiment (and disembodiment), will, this chapter argues, expand art theoretical reflection surrounding interactivity.

What follows is not an exhaustive study of digital art or new media; it is rather a delimited discussion of certain aspects of these discourses in order to contextualize interactive art and embodiment within a larger discussion.

Following this introduction, Sections 2.2, 2.3 and 2.4 summarize three key theorists' approaches to digital art, each attempting to encompass the broad discipline with different foci: Lev Manovich writes on new media as a tool for production; Oliver Grau attempts to get at artists' intentions in the making of digital images and virtual realities; and Christiane Paul gives a broad art historical context to digital arts practice. These three were chosen not only because of their status in the field, but also because of how their work exemplifies a bias towards vision that is found more generally in contemporary art discourses. Following this, Section 2.5, "Bringing Bodies to Digital Art," introduces the idea of a more specific approach to the sub-genre of interactive art, one that invests in embodied activity. Section 2.6, "On Looking and New Media," turns to the work of Mark B.N. Hansen to re-assert the role of the body in 'looking' (a reconfiguration of seeing), and to argue that new media enhance that role. Sections 2.7, "Of Disembodiment and Data Discourses in the New Mediascape" and 2.8, "Being Bodily," examine the thinking behind a broad range of contemporary cultural theorists in order to respectively illustrate how, historically, disembodiment as a theme has dominated (and distorted) new media theory, and to argue that digital and interactive art have a stake in reclaiming embodiment. Chapter 3 follows this examination and argument, exploring embodiment, and how we currently understand it, in more detail.

2.2 The Language of New Media, Lev Manovich on Digital Art

In *The Language of New Media*, Lev Manovich traces the convergent histories of media and computing technologies; he proposes principles to which digitally produced art works adhere (and can be remixed and reiterated because of); and he uses analogies to film and 'the database' to open a space of thinking around "the computer as a tool for media production" (19). It is been hailed as "the first rigorous and far-reaching theorization of the subject" (Mondloch) and *Telepolis* magazine claims that it places "new media within the most suggestive and broad ranging media history since Marshall McLuhan."⁴ It is an undeniably important book with much to offer the field; but ultimately, Manovich's language of new media is one that is being "grafted upon cinema and visual theory" (Looy); it is rooted in the hegemony of the visual image, and, in its reliance on a semiotic approach, explores an almost exclusively linguistic understanding of digital art.

For Manovich, the computer is not only "a machine for the exhibition and distribution of media," but also "a tool for media production" (Key Texts 19). After accepting computers as tools for creation rather than (or, in addition to) presentation forums, Manovich is able to construct various narratives around the languages of production, and the cultures that create, and are created by, said production.

It should be made clear that throughout the book Manovich refers back to his fundamental analogy: digital media are like film. But he also shows where the two diverge; he begins by contrasting them, setting up what he calls the five core "principles" essential (and perhaps unique, when presented jointly) to new media (and by extension, digital art):

1. Numerical Representation: new media objects "can be described formally (mathematically)" (Manovich, LNM 27). At their core, all digital objects are actually binary – just zeroes and ones. Furthermore, most are described in more efficient 'codecs' (like jpgs for images, or mp3s for music), and then decoded by our computers for viewing or listening. These files are not only "described using a mathematical function," but are also therefore "subject to algorithmic manipulation," like removing dust and scratches from a photograph, or layering sounds in a studio application (Manovich, LNM 27).

2. Modularity: new media objects consist of "independent parts, each of which consists of smaller independent parts, and so on, down the line to the level of the smallest

⁴ Translated and qtd on <http://visarts.ucsd.edu/node/view/491/37> (UCSD).

'atoms' – pixels, 3-D points, or text characters" (Manovich, LNM 31). Discrete elements – such images, and web or word documents – can be accessed on their own, highlighting what he calls the "fundamentally [...] nonhierarchical organization" of new media (Manovich, LNM 31). He draws a parallel to the fractal – which has the same structure on every scale – and uses modularity to set up the possibility for removal, addition, and substitution, all common production techniques in new media.

3. Automation: "The numerical coding of media (principle 1) and the modular structure of a media object (principle 2) allow for the automation of many operations involved in media creation, manipulation, and access" (Manovich, LNM 32). We can run a filter to make our photographs look like a Van Gogh painting, or remove background noise from an audio recording, by running simple, repeatable algorithms on the modular, numerical parts of any given digital file. Manovich gives as one example Artificial Life applications, often used in Hollywood to produce flocks of birds, crowds of people or burning fires, on film. Here he even alludes to the generative possibilities because of this "principle" by stating, "human intentionality can be removed from the creative process, at least in part" (Manovich, LNM 32).

4. Variability: "A new media object is not something fixed once and for all, but something that can exist in different, potentially infinite versions" (Manovich, LNM 36). Manovich refers to customization and scalability as possibilities, and compositing and re-mixing are later echoed in his short tangent on "Postmodernism and PhotoShop" (LNM 124).

5. Transcoding: "the most substantial consequence of the computerization of media" (Manovich, LNM 45), the ability to translate one kind of data – or rather, how that data is decoded and represented for us – into a different form. All digital files follow "the established conventions of the computer's organization of data" (Manovich, LNM 45), and so that data can be used and portrayed in various formats. This could mean using algorithms that translate, for example, sounds into visuals or mouse movements into Morse code.

According to Manovich, these principles demonstrate how, although "New media may look like media... this is only the surface" (LNM 48). Videos, photographs and text might still look the same on our computer screens as they do on our televisions, but they are fundamentally different underneath; he asserts that "the identity of media has changed even more dramatically than that of the computer" in recent history (Manovich, LNM 27). In other words, while Manovich draws on the historical antecedents of film to

study the surface of new media – what it looks like and how we tend to read it – he also discusses how it differs in its instantiation, in how we work with it and how it is made. This allows Manovich to extrapolate a potentially different reading of new media precisely because of its principles, because of how it exists and is produced and/or transformed. These principles, Manovich consequently argues, are not only for media practitioners. Because new media are coded and modular, and they can be automated, varied and transcoded, users', readers' and receivers' understandings of media more generally (the "cultural layer") have shifted along with the "computer layer" (Manovich, LNM 46). We, as a computer savvy culture of viewers, already read the surface of the screen differently, he argues, and must therefore engage with that difference. At stake, is that computers mediate not only *what* we see, but also *how* we see, and where we find meaning. Manovich contends that contemporary media consumers inherently (if also unconsciously) understand his principles of new media, and thus see and think about media materials in relation to them.

Following this assertion, Manovich "meticulously analyses how the shift to computer-based media redefines the nature of static and moving images," concentrating on a comparison with time-based images for the vast majority of his book (Arns). For example, he compares the selection and compositing of new media to film montage in the 1920s, and 'teleaction' to telepresence – with each analogy, Manovich draws both parallels and distinctions between film and the digital.

In his Chapter 5, when Manovich diverges from his comparison with film, he lucidly uses the digital database (storing images, texts, videos, other databases, etc) as an analogue metaphor for worldwide "content" (which may additionally include concepts, ideas, physical forms, and so on), now accessible to all of culture in a non-hierarchical fashion, waiting to be ordered and/or transcoded into infinite possibilities. In the words of former Rhizome Executive Director Rachel Greene, "one of the most fascinating histories in *The Language of New Media* is Manovich's description of the artistic and narrative possibilities of the emergence of the database paradigm, and the corollary interest in isolating, manipulating and displaying discrete units (of code, datum, etc.)" (). Artists can now create a narrative from 'structureless' content, make up "a cause-and-effect trajectory of seemingly unordered items (events)" (Manovich, LNM 225). Here Manovich previews the artistic and cultural phenomena of the re-mix, the mash up, and pirate media art.

Manovich's principles and analogies are useful in that they put forward a number of ideas that can be interpolated further by theorists to come. It is clear, however, that

starting from the dominant discourse found in the 'language' of film studies (especially the 1970s – 1990s) forces a largely semiotic, and image-based, approach. Inke Arns sums up Manovich's text most succinctly:

Although photographic and moving images... have, among other influences, contributed to the development of a language of (new) media, in this publication they are made to represent the whole of (new) media.... in order to avoid misunderstandings, the book should have been called 'The Language of New Visual Media.' (Arns)

Even Manovich's database analogy concentrates on media that occurs mostly in images or texts. His approach is one that certainly helps to decode visual signs on screen, in print, or even in sculpture, but is limited when applied to questions beyond them.

Despite his understanding that things are going on beneath the surface of the (digital) image, Manovich ultimately gets stuck in thinking about images, even if they are in relation to his principles. By beginning with film and surface, and ending with film and surface, he misses out on the broad possibilities of digital art, on questions of, for example, perception and affect, to name just two themes of embodied activities very often explored by new media practitioners. While useful for reading the visual elements of digital art, Manovich barely mentions large bodies of new media work that do not coincide with his thesis. To name a few: generative art, net.art, virtual reality, and of course, interactive art. This dissertation is an in-depth study of the lattermost of these categories.

2.3 *Virtual Art: From Illusion to Immersion, Oliver Grau on Digital Art*

In his treatise on virtual art, Oliver Grau defines virtuality as "an essential relationship of humans to images" (Slayton XI).⁵ He sets out to demonstrate how this relationship is evidenced in both old and new media. "Postulating that the technological convergence of image and medium is driven by the desire for illusion, Grau describes the

⁵ It is necessary to note that Grau's definition of virtuality is mostly informed by Virtual Reality, and, as openly admitted by Grau, "The expression 'virtual reality' (Jaron Lanier) is a paradox, a contradiction in terms, and it describes a space of possibility or impossibility formed by illusionary addresses to the senses" (15). The philosophic term of virtuality defined by Bergson, and later picked up by Gilles Deleuze and Brian Massumi, has a "reality" which is "that of potential," is the "*immanence* of a thing to its still indeterminate variation," an "unfolding toward the registering of an event" (Massumi 8). Massumi et al's conception of the virtual is more closely related to emergence and relationality, both covered in depth in Section 3.3, than to Grau's image-based reading. 'Potentiality,' and its relation to the 'event,' is covered in Section 3.5.

paradigm of virtuality as one of physical and psychological perception, of essence manifested as a sensorial experience in the observer" (Slayton XI).

Grau sets out to "trace... the long and complex tradition" (11) of the efforts to "produce maximum illusion" (5) in what he calls "immersive images."⁶ In exploring the history of this "image-concept" he seeks to "sketch its vitality and almost revolutionary character that is emerging through the potential of interaction with and evolution of images" (Grau 11). He tries to avoid a "technology-centred" approach and instead sets out to "situate the artistic images of virtual reality within the history of art and the media" (Grau 11). Grau wants to "relativize the phenomenon" to "determine what makes it unique" (11). Although he is interested in how images (broadly defined) affect the other senses, and his study of the history of images is worthy of commendation, his core arguments all circulate around vision and the construction/representation of illusion, and thus, like Manovich, lack the necessary inclusion of embodied processes essential to understanding interactive art.

One of Grau's stated goals is to debunk the assumption that virtual and immersive images are entirely new. His history of immersive art begins as early as 60 BC in Pompeii, with the Villa dei Misteri, arguing that panoramas and 360-degree images – such as witnessed here and much later in fifteenth century Italy, in nineteenth century Russia and at many points of time in between, and discussed by the likes of Wagner, Benjamin, McLuhan and Virilio – are the predecessors to 3-D, Virtual Reality and interactive mixed reality environments. Julia Bryan-Wilson paraphrases Grau to say that such 'images' share "rhetorical strategies" which seek "to enclose viewers within the fabric of the image itself" (VA Review). As Grau asserts, throughout this entire history "extraordinary efforts were made to produce maximum illusion," to "integrate the observer in a 360-degree space of illusion or immersion, with unity of time and place" (5, 14).

In virtual space (historical or contemporary), argues Grau,

the illusion works on two levels: first, there is the classic function of illusion, which is the playful conscious submission to appearance that is the aesthetic enjoyment of illusion. Second, by intensifying the suggestive power that may, for a certain time, suspend the relationship between subject and object, and the 'as if' may have effects on

⁶ I would argue that Grau's larger views of an individual art work as intended to achieve "maximum effect for [a] message," that an "artwork symbolizes and focuses a particular artistic view of the world" (17, 204), is fairly antiquated as an approach to contemporary arts discourse and practice. This may be due, however, to poor translation from German into English.

awareness.... This is the starting point for historic illusion spaces and their immersive successors in art and media history. (Grau 17)

Further, Grau says that all image media may be described in terms of

their intervention in perception, in terms of how they organize and structure perception and cognition, virtual immersive spaces must be classed as extreme variants of image media that, on account of their totality, offer a completely alternative reality... [that] affects sensory impressions and awareness. (14)

Grau goes so far as to claim that the “technological goal” of virtual artists, “as stated by nearly all researchers of presence, is to give the viewer the strongest impression possible of being at the location where the images are” (14). But pioneering VR artist Myron Krueger claimed as early as 1991 that “the degree of physical involvement [is] the measure of immersion” much more so than “illusion” and “3D scenery” (4). And David Rokeby’s stated goals for *Very Nervous System*,⁷ for example, diverge markedly from those Grau asserts as standard. In the edited collection of essays, *Digital Illusion*, Rokeby in fact argues explicitly for thinking interactivity as different from illusion-based immersion (Construction).

Grau’s book lays out an interesting history and trajectory, which proceeds from painting through moving images and concludes by opening doors to interaction and multisensory experiences. But he misreads all virtual – and by his own extension digital and interactive – art as being based on vision, and falsely attributes his own interest in images to the field at large. This is very obviously inadequate for art works that require active embodied participation as an integral part of their realization. Grau claims that he is *solely* interested in “images... no more, but also no less” (308). The core problem with this is that he does not simply address image media art works about how and what we see; he attempts to unpack pieces that provoke embodied experiences in real-time. He looks at movement, polysensory activities, interaction and contact in digital art – but his discourse remains always and only in the realm of vision (Grau 349-350). Such an examination would require much more than a study based on images.

Where Lev Manovich is too broadly based on visuality and language for interactive art, Oliver Grau is too narrowly focused on the image – and both theorists attempt to fit

⁷ See Section 2.1

interactivity into their own interests and backgrounds. Grau too ultimately gets stuck in the visual paradigm, treating performance and interactivity as part of the immersive *image* rather than properties of a larger (non-visually based) art and discourse. What about work, like Theodore Watson's, that is "born out of the curiosity and excitement of designing experiences that come alive and invite people to play" (Watson, Info)?⁸

I specifically choose Watson's *audio space* (2005-2008, see Figure 3, page 17) as an example here because it is an immersive digital art work that does not use any visual media at all. It is quite literally an *audio space* that is created and transformed through the collaborative performance of its viewer-participants, over time.



Figure 3, *audio space*, Theodore Watson, 2005-2008
Performative Sound Installation and Sculpture, dimensions variable

For this installation in a large empty room, Watson equips participants with a microphone and stereo earphones on a headset, and prompts them to leave sonic messages – by speaking phrases from personal stories, vocalizing or humming tunes in relation to their activities, whispering commands – as they move around the space. Each viewer-participants' real-time interactions, where they go and at what speed, and all the sounds they make as they do so, are recorded together. Any given collaborator leaves their aural contribution at exactly the point they spoke it, and hears past sounds from around the room as if every participant is still present and active. In other words, if I say something while standing in the centre of the space, that message will have the highest volume in the headphones for future participants in the same spot. But this sound will also be heard at a distance, at lower and lower amplitudes as listeners move further from the point where I left it. If I crawl on the floor and whisper, sprint around the edges with hard breathing, or hum an eerie tune while squatting in a corner, these spatialized actions and their soundtracks are partnered with the space, as well as past and future contributions.

⁸ Amsterdam-based Theodore Watson is probably best known for the *laser tag* (2007) software he developed for New York's Graffiti Research Lab, as well as for his ongoing work on *openFrameworks*, "an open source library for writing creative code in C++" (Watson, Info). See graffitiresearchlab.com and openframeworks.cc, respectively.

Viewer-participants experience the sonic and spatialized actions that came before, and also add their own.⁹

Watson calls the *audio space* system, which he produced and continuously adapted between 2005 and 2008, “a sonic architecture” where “people are really sculpting the space with their voice” (Herst and Watson 13-14). He began with the premise that sound is often “thought of as a transitory medium.... Yet [it] has an immense power to move people” (Watson, Thesis). Later, Watson became more “interested in using *audio space* as a musical / psycho-acoustical instrument where people can experience sonic forms three dimensionally.”¹⁰ This almost architectural space is defined and engaged invisibly, through a history of sounds and movements that take on a density in their shared creation and experience. We are invited into a virtual and immersive, but imageless, 3D tracking system to explore “the relationship between sound and the creation of space” (Chung).

Says Watson:

The space becomes a memory of the people who have interacted with it. The user can respond to messages left by previous users or seed conversation for future discussions. The combined sounds create rich, evolving atmospheres for different parts of the room and to the user it creates a superimposed sonic environment that seems tangible and very real. (Audio Space)

We literally create (and navigate) *audio space*, through an evolving, physical interaction that makes past and future movements and sounds perceptible and substantial. It is a completely immersive environment, produced and experienced through activity, touch and sound.

Although *audio space* allows us to create a virtual reality, an immersive space of illusion, it is not at all image-based. Like so many contemporary pieces of digital art, the work happens in the relationships that emerge from our interactions with it. Oliver Grau includes perception and bodies and interactivity in his readings of digital art towards the end of his book, but he, like Manovich, begins and ends with images; he thus wrongly

⁹ A similar work worth mentioning in parallel to *audio space* is Carsten Nicolai's *static balance* (2007), which “works both as a sculpture and as a system to conduct and distribute sound” (Nicolai).

¹⁰ In a private email to me, 16 April 2008

places perception and bodies and interactivity as subordinate to images, as only engaged through the sense of vision. *audio space* is just one of a plethora of examples that show how Oliver Grau's approach to virtual and digital art is far too concentrated in visual perception to adequately address interactive art.

2.4 Digital Art, Christiane Paul on Digital Art

Christiane Paul's *Digital Art* provides an encyclopaedic survey of the field, exploring the most important works and influential artists in the area of new media.¹¹ Although for the most part a chronological overview that briefly reports on who did what and when, the book is also structured into three main topics that help to unpack the varied creative uses of new media: the use of digital technologies as a tool; the incorporation of digital technologies as a medium; and the extrapolation of the key themes in digital arts practice (primarily focused on the last twenty years).¹² Paul's tool/medium breakdown allows her to explore a much broader range of artworks and issues than Manovich or Grau; it better represents, and succeeds in drawing a more inclusive circle around, the large field of new media art.¹³ Digital art, she argues is an "umbrella for a broad range of artistic practices" (Paul, *Renderings*); it does not, in fact, have one particular aesthetic (perhaps addressing Manovich directly), but an interdisciplinary set of approaches. In particular, by engaging with interactive and networked media art as integral to understanding digital art more generally, her book starts to move the discussion away from the hegemony of the visual image. This dissertation picks up on Paul's start, and moves the discussion towards an intense focus on the possibilities found in interactivity.

The Whitney Museum's long-time adjunct curator of digital art, Paul began publishing frequent articles on the topic around the same time as the release of Manovich's book. And it was not by accident that her discussion also started in the pages of *Leonardo*, where she pondered, "We are only now beginning to understand the effect of digital technologies on our culture, subjectivity, and the body" (Paul, *Worlds* 402). Paul states:

¹¹ It should be noted that this section intersperses citations from two of Paul's articles on digital art that preceded and informed her book, as well as the book itself.

¹² Although originally published in 2003, a second and updated edition was published in late 2008, including newer work, as well as an entirely new section on networked art in online worlds such as *Second Life*.

¹³ While artists have been engaging with digital media in this way for some time (and later books followed), Paul's *Digital Art* is the first extensive, theoretical text that makes the tool/medium distinction clear from the outset, and allocates equal time and space to the latter.

While any process of engaging with art is by nature interactive, the interaction usually consists of a mental event when it comes to traditional media. In digital art, it is the “virtual object” itself – be it a narrative, a musical composition, or a 3D world - that can be manipulated by viewers/users and changes its structure and form. (Paul, Worlds)

Paul is immediately more sensitive to not only new media as a production tool, but also as a medium that is unique in its use of interactivity, and how that affects our experience of bodiliness.

Similar to Manovich, Paul’s book begins with “a short history of technology and art” (DA 8), but she spreads her computer realm research across tabulators, visual interfaces and the internet, and instead of film, she places stock in several fine arts and performance movements, like Dada, Fluxus and conceptual art. She contends that the “importance of these movements for digital art resides in their emphasis on formal instructions and in their focus on concept, event, and audience participation, as opposed to unified material objects” (Paul, DA 11). She gives as one example Dada’s “construction of poems using random variations,” foregrounding “the idea of rules being a process for creating art” as having “a clear connection with the algorithms that form the basis of all software and every computer operation” (Paul, DA 11). And she shows how “interaction and ‘virtuality’ in art were also explored early on by artists such as Marcel Duchamp and László Moholy-Nagy” – examples being their *Rotary Glass Plates* (Precision Optics) and kinetic light sculptures, respectively” (Paul, DA 13). After this concise history, Paul briefly covers works of photography, print and sculpture in her chapter on digital media as a tool, and in the chapter where they are utilized as a medium, installation, time-based works, internet art, software art, VR, sound and more experimental forms.

When Paul writes about the use of digital technologies as a medium, she begins to explore new media’s possibilities in ways that Manovich and Grau barely address. It is worth citing at length where she asserts that the digital format

makes use of the inherent possibilities of the medium.... this art can manifest itself as everything ranging from an interactive installation to an installation with network components to software or purely Internet-based art. [It] is interactive, allowing forms of navigating, assembling, or contributing to [an] artwork to go beyond the mental event of experiencing it. It is often dynamic, responding to a changing data flow

and real-time data transmission... [and] often participatory, relying on multi-user input.... While some of these concepts have been explored in performance art, happenings, and video art, the possibilities of remote and immediate intervention are unique to the networked digital medium.

(Paul, *Renderings*)

Paul's attention to interaction, immediacy, networks and intervention strikes a stark contrast between her and many of her predecessors.

In the section on Themes in Digital Art, Paul covers a wide range of topics that contemporary digital artists address. With regards to that which is covered in this dissertation, she briefly points to 'the body and identity' as one key concern and goes so far as to say, "Our virtual existence suggests the opposite of a unified, individual body – multiple selves inhabiting mediated realities" (Paul, DA 165). She calls attention to the varying and distributed identities that we can live throughout the Internet in an attempt to show that the "relation between virtual and physical existence can hardly be constructed as a simple dichotomy. Rather, it is a complex interplay that affects our understanding of both the body and (virtual) identity" (Paul, DA 165).¹⁴

Paul's shift from thinking about digital technologies as a production tool (or illusion machine) to thinking about them as a medium enables her to recognize the ways in which computers themselves are multimedia objects that viewer-participants can interact with directly. In this shift, Paul thus facilitates an analysis of a networked and/or reactive interface as art with which we interact,¹⁵ and which, in turn, affects our understandings of ourselves.

Despite its success as a survey of digital art that starts to move away from a primary focus on the visual aspects of new media, Paul's book, in its very nature as a broad treatise, lacks specificity and depth. The implicit body approach takes Paul's work as one starting point, arguing, further, that in interactive art it is not the digital interface that is the medium or art object, but our actual interactions *with* it. In work such as Rokeby's *Very Nervous System* and Watson's *audio space*, there is no singular thing or

¹⁴ As will be discussed at length in the following two chapters and exemplified thereafter, the implicit body approach and framework concentrate less on 'the body' and 'identity' as conceptual constructions, and more so on continuous categories such as 'embodiment' and 'differentiation'. The definitions of these terms unfold throughout this dissertation, beginning in Section 3.1. This section aims to show how Paul's text simply leads in opening up avenues of investigation with regards to interactivity and the body more generally.

¹⁵ What she calls the post-object.

image we put on a plinth or hang on a wall (the digital as tool); but neither does the work belong to the video cameras and computers viewing and responding to our interactions (the digital as medium). Here the frame belongs to the body, the 'work' is produced by its viewer-participants' embodied interactions in real-time. We must therefore bring the body into our critical discussions of interactive and digital art.

2.5 *Bringing Bodies to Digital Art*

Near the birth-time of video installation (in many ways a precursor to, and now sub-genre of, new media art), film scholar Margaret Morse similarly argued for kinaesthetic insights into this kind of work. She asked how such spatial and temporal art is tied to the action (or inaction) of the viewer. She argued for an interrogation of the supposed space between viewer and that which is viewed, and tried to open up the element of surprise and possibility in how we move around and thus differently perceive these large-scale installations. Morse was calling for thought as to how such pieces mediate a mediated culture: as interweaving the corporeal and conceptual. She reasoned that such work "allows the visitor rather than the artist to perform the piece," and that such installations invite a "vocabulary for kinesthetic 'insights' for learning at the level of the body ego and its orientation in space" (Morse, *Video Installation* 153).

In the companion catalogue to her 2006 exhibition, *Sensorium*, curator and academic Caroline A. Jones takes this one step further in her writing about the "reigning hegemony" of the five senses, and asks us to think about digital "art in [a] broadened sensorial context" (Introduction 8). Here Jones not only serves this chapter's argument around placing too much stock in vision with regards to digital art, but also implores her readers to think beyond the perception of the five senses, and place emphasis on "embodied experience" as a whole (Mediated 5). Jones aims to "locate how bodies are interacting with technologies at the present moment, and provide a site for questioning those locations" (Introduction 2). She classifies the most common tactical and technical approaches used in contemporary body art projects – including immersive, alienating, interrogative, residual, resistant and adaptive art works – and gives examples of each in order to play out the coordination "of the body's perceptual and proprioceptive signals as well as the changing sensory envelope" (C. A. Jones, Mediated 8). Although she does not name them all explicitly, she alludes to preconscious and affective action, and interoception (sensitivity that takes place inside the body), as well as paying tribute to the proprioceptive ways in which the body communicates with itself. Jones begins the

argument that these ongoing and embodied action-experiences must be critically thought through as much as the exteroceptive senses of touch, sound, taste, smell and vision.

In a similar view, noted digital art scholar and philosopher Erkki Huhtamo declares that an “interactive work challenges one to undergo a transformation from an onlooker to an ‘interactor,’ an active agent” (71). This insight leads him to wonder if we can better judge an interactive piece of art through *what we do and experience*, in addition (and in response) to what we see. He gives as an application the possibility of creating complex taxonomies for touching. Here we might analyse, for example, how a work could “serve the interchangeability of the senses, or the simulation of other senses” (Huhtamo 87-88). Although his hypothesis is somewhat “tentative” (Huhtamo 88), Huhtamo’s proposed taxonomy reads interactive art as not involving the visualization of an abstract idea or mimetic re-presentation of the world, but the experiential and embodied enactment of a work (and, perhaps, the viewer).¹⁶

And Ken Feingold, an acclaimed new media artist as well as scholar, has also argued for the importance of touch, vision, and an affective body moving through space as integral to participation in and “materialisation of the work” (127). Here Feingold gestures to what, this dissertation asserts, is unique to interactive art. Namely, interactive art works emerge from the relationship between what the artist has created, and the embodied participants that use them. As cultural theorist Paul Carter would say, “This is methexis in operation and not representation ... meaning is produced as an embodied, situated, event” (84 qtd. in; Bolt 142). The work takes on “its own momentum, its own rhythm and intensity,” and through its “radical material performativity” it produces *techne* as *poiesis* in Heidegger’s sense of starting something on its way (Bolt 1, 10, 61).

This dissertation warns to be wary of the logic of representational claims made on behalf of the image, and calls for a new vocabulary of forms, rather than the transfer of old visual habits into a new mode. But instead of a tactical or technical approach such as Jones’, it proposes a theoretical approach and critical framework for interactive art based on contemporary philosophies of embodiment, and looks for specificity in how we understand movement, affect and sensory / kinaesthetic engagement. It doesn’t put forward a Huhtamo-inspired taxonomy for dissecting the ‘kinds’ of touch or movement

¹⁶ In 1991, Francisco Varela, Evan Thompson and Eleanor Rosch coined the term ‘enaction’ to describe a “dynamic interplay between self and world... they envision mindbody and environment coming into existence through a mutual process of ‘codependent arising’” (110, paraphrased in Hayles, *Flesh and Metal* 306).

available to us and what each means hypothetically, but a framework for interrogating affective performance and relationality in the moment of the work's interactive realization.¹⁷

In his essay "Process, Performance, Machine: Aspects of an Aesthetics of the Machinic," curator, scholar and critic Andreas Broeckmann asserts,

The aesthetics of electronic or digital artworks hinges, to a large extent, on non-visual aspects, such as narrativity, processuality, performativity, generativity, interactivity, or machinic qualities. In order to embrace these practices, we need to develop an aesthetic theory [or many theories, as the case would have it] that is able to adequately approach recent works of contemporary art which deploy digital technologies and which expand the categories of art theoretical reflection. (196-197)

Broeckmann analyses five "aesthetic categories" – image, execution, performance, process and machine – and, although he admits it is not a conclusive list, he provides "terms which can open up a renewed dialogue about a contemporary aesthetic theory that uses the experiences of digital culture to rethink art" (205).¹⁸

Like Broeckmann, this dissertation seeks a rethinking of the categories of art, one that acknowledges the primacy of embodiment and interactivity over theoretical reflection and practice in the materialization of the work. It takes up Manovich's challenge of a rigorous study where new media is not neutralized, diluted or rendered harmless, but aims for depth rather than breadth in its investigation.

The implicit body approach put forward in this dissertation is rooted not in the hegemony of the visual, but instead concentrates on an interactive and relational approach to perception and action; it looks to the body and embodiment as potential focal points in understanding the work of art, and to interactive art as opening up

¹⁷ Performance and relationality will be discussed in depth in Chapters 3 and 4.

¹⁸ This plea for renewed dialogue echoes several other theorists and critics over the last decade and a half. One such call, for example, was in Simon Penny's (visited at length in Section 5.4) 1995 anthology, *Critical Issues in Electronic Media*. This collection was "a response to [the new] conditions" surrounding art and technology (Penny, Introduction 3). In his introduction, Penny asserts, "The new digital media promise new territories for artistic practice. But they demand a reconsideration of art production and consumption. The new dimensions and capabilities of the new forms (interactivity, instantaneous multiple distribution, ephemerality) demand the generation of new aesthetic models, new ethical models, new institutions... and new conventions of consumptions" (Introduction 3).

understandings of embodiment. In the framework and case studies presented in Chapters 4 through 8, meaning is found not only in what an art work or artist tries to accomplish and how the piece functions, but also how we *literally move* with and against it, and what is revealed or interrogated in that co-performance.

An aesthetic theory of digital art cannot, as extant theories suggest, be merely located in that which can be observed. As Broeckmann and his peers collaboratively contend, our understanding of contemporary digital art may be opened up by our experiences of digital culture more broadly. In order to contextualize the necessity of the shift from a visual to embodied, observed to interactive, understanding of interactive art, the rest of this chapter explores how new media, and of the act of looking itself, have historically been (mis)understood as disembodied or disembodimenting.

2.6 On Looking and New Media

This section is a close reading of Mark B.N. Hansen's examination of the digital image as "postphotography," where he maintains that the body "has become the crucial mediator between information and form (image): the supplemental sensorimotor intervention it operates coincides with the process through which the image ... is created" (Postphotography 79). It argues, along with Hansen, that new media artworks "literally compel us to 'see' with our bodies" (Postphotography 63), and that this, in turn, compels us to see both 'seeing' and embodiment differently. With postphotography we have an affective and proprioceptive body on the one hand, and on the other is an embodied (computer) prosthesis/print as catalyst. In the 'digital middle,' haptic vision – where we feel and are touched by what we *see*– emerges through a cooperative effort.¹⁹ Here, as I argue with interactive art, body and image / work mediate one another, and the locus of perception is between and of the two.²⁰

¹⁹ The turn from the optic (seeing as a disembodied observer) to the haptic (seeing as touch) can be seen in a number of recent works that address film and video in particular. For example, see Jean Arnaud's "Touching to See," an analysis of filmmaker Michael Snow's work, or Laura Marks' *Touch: Sensuous Theory and Multisensory Media*. Marks explores the affective and embodied experience of new media objects as well as film and video. Like Hansen, she uses the work of Deleuze (and, thus, Bergson) to rethink the perceptual event. Interestingly, she extends the haptic-optical synaesthetic strategy to the sense of smell, and to the erotic (in her meditation on the screen as skin). For Marks too, the notion of digital culture as immaterial and transcendent requires critique and she extends many of her explorations of the haptic and material into the realm of code. Marks argues that alongside its embodiment vis-à-vis the viewer-participant, digital media embody a materiality at the level of code, as well as on social and global levels.

²⁰ This between/of the two is developed beyond questions of perception in later discussions of co-emergence and relationality. See Chapter 3 and Sections 5.2 and 6.2.

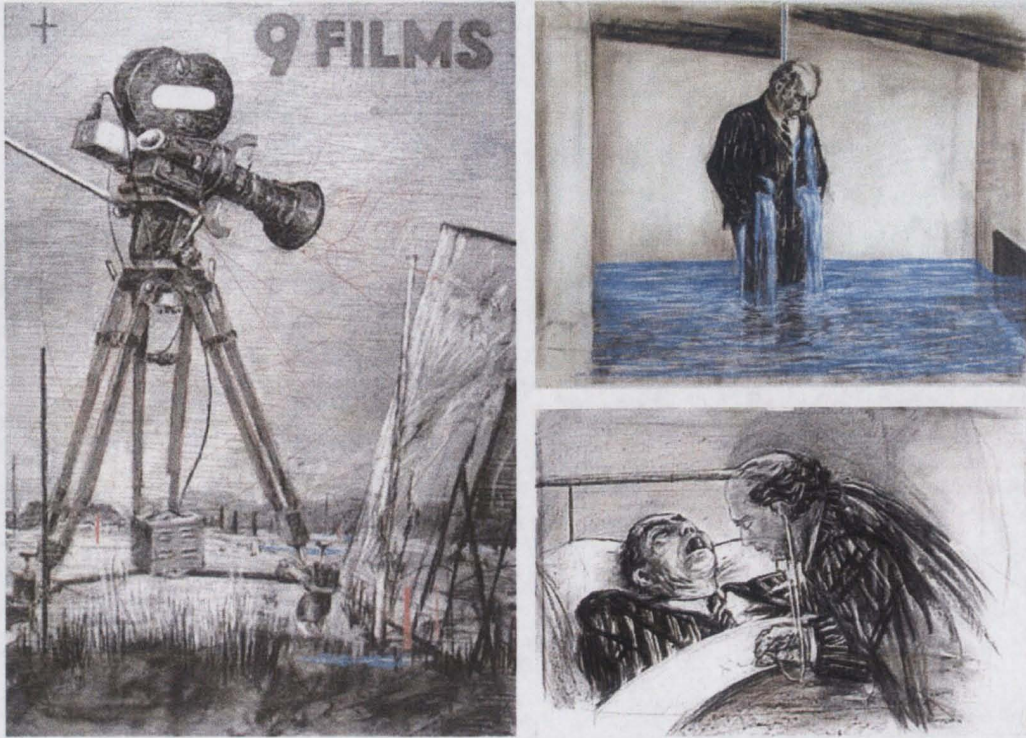
Central to Hansen's analysis of seeing is a critique of its elevation as the pre-eminent sense, as the essential source of knowledge and objectivity. In this elevation, what is perceived is not subjective, but fact. Historically, this misapprehension of vision has also mistakenly led to the disarticulation (or disincarnation) of the eyes from the body: if looking is objective rather than subjective, then there must not be a subject (or body) who is looking. The disembodied eye is all knowing. As Hansen acknowledges, this critique has been extensively proffered elsewhere, and rather than revisit this terrain at length,²¹ he argues instead for the ways in which digital images (postphotography) elicit a proactive experience of looking in which the co-operative effort between seer and seen creates what *is*.

Although not postphotography in Hansen's sense, here I propose that the work of South African contemporary arts pioneer William Kentridge provides a perfect example of the "digital middle" that compels proactive / haptic seeing. Kentridge is probably best known for his trace and erase method of charcoal animation, applied most famously in his series *9 Drawings for Projection* (1989 – 2003, see Figure 4, page 27).²² Here Kentridge makes an entire animated sequence from a single drawing. Without storyboard or script, he adds and subtracts bits and pieces from the page, with a stop-frame snapshot after each iteration.

His narratives and imagery – at once melancholy, graceful, and open-ended – emerge through this unusual, labor-intensive working process. He adds one mark, erases another, walks over to a camera a few feet away and shoots a couple of frames. Making the short trip back from camera to drawing, he says, he "hopes that some idea will emerge to suggest what the next drawing or the next sequence should be." He then repeats the process over and over, so that each narrative instant bears the eloquent traces of all that has come before. In the end, he is left with one short film and a very small stack of drawings, one for each scene in the film. (Public Art Fund)

²¹ It is beyond the scope of this dissertation to unpack the politics of seeing Hansen is speaking back to; there have been many comprehensive and insightful studies in this area. Two examples written by theorists mentioned in this chapter are Jonathon Crary's *Techniques of the Observer: On Vision and Modernity in the 19th Century* and Laura Mulvey's *Visual Pleasure and Narrative Cinema*.

²² For a video sampling of Kentridge's animated style, see <http://dvblog.org/?p=517>

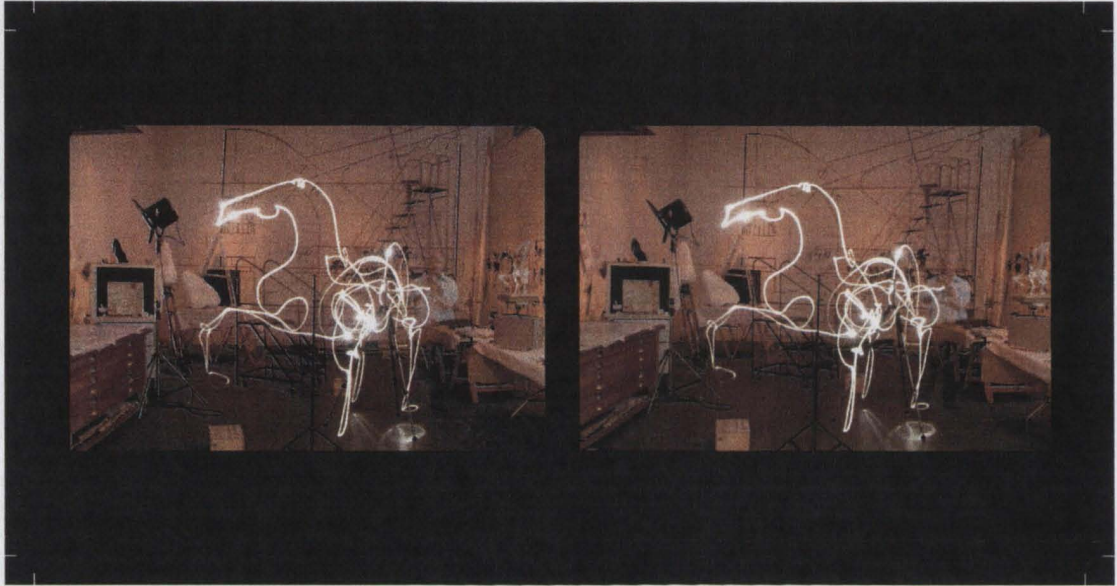


*Figure 4, stills from 9 Drawings for Projection, William Kentridge, 1989-2003
Charcoal Animations on film, video or DVD, projection dimensions variable*

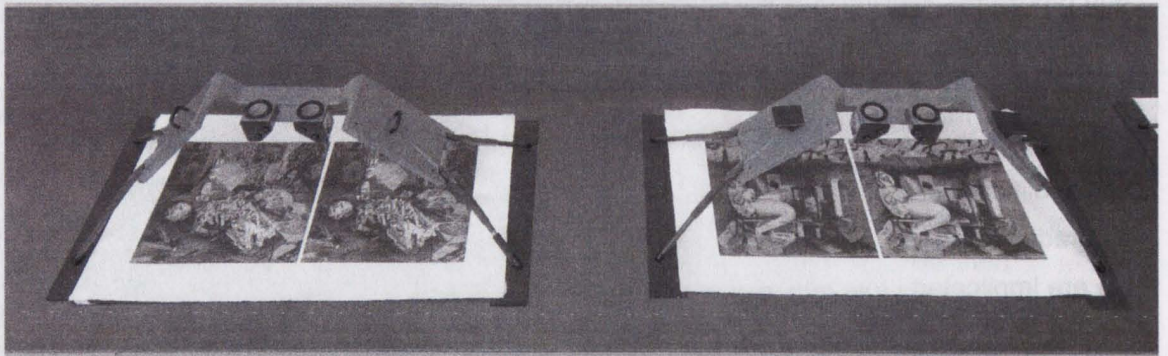
Kentridge's process, which he claims as essential to what he makes, incorporates erasure and redrawing, walking, looking and photographing some frames, into his ongoing viewing, thinking and creating. His active and processual doing creates a rich series of works that draw attention to how we pay attention, to our affect and our looking. While Kentridge's content is mostly centred around personal relationships within the ripe sociopolitical climate near the end of apartheid rule, his work is also "an art of ambiguity, contradiction, uncompleted gestures and uncertain endings" (Public Art Fund), in which we are implicated / touched as viewers.

This aspect of Kentridge's work is made even more explicit in his recent exhibition, *Seeing Double* (2007-2008), which includes a series of anamorphic projections and stereoscopic drawings and photogravures, amongst other things. For example, in collaboration with South African photographer John Hodgkiss, Kentridge created what he calls "stereoscopic light drawings" that are probably better understood as 'light sculptures' (see Figure 5 and Figure 6, which follow). Each 2D print "reveals 3D effects when viewed through a stereopticon, a projector that uses two lenses to dissolve between images when projected" (Brodsky Center for Innovative Editions). In production, Kentridge utilizes a flashlight and his whole body's sweeping gestures to 'draw out' large, 3-dimensional sketches. In other words, where pen on paper makes flat line drawings, Kentridge uses

light in space to make 3D figures. He and Hodgkiss work with slow exposure in order to capture the moving light over time, and the stereoscopic strategy of side-by-side photographs so as to re-produce the spatial effects of Kentridge's studio for the viewer. Here, the artist turns "dimension and duration" into "time and space" (B. Gray 63).



*Figure 5, untitled stereoscopic light drawing, William Kentridge, 2007
(this 'image' later used for photogravure print)*



*Figure 6, stereopticons and Kentridge 3-D prints at Seeing Double
exhibition at the Marion Goodman gallery in New York*

The works in *Seeing Double* emerge from the dynamic performances of Kentridge's moving and looking body. He births and draws out spatialized images through his active and reciprocal process of seeing and doing, perceiving and making. The works must themselves always be viewed by two embodied eyes, part of a whole fleshly thing that walks to the stereopticon, bends to its call, and sighs with marvel at what it reveals. Kentridge's stereoscopic light drawings transform understandings of embodied making, doing and looking by blurring the lines between them. The "postphotograph"-like image is

produced between his body and the work of art, and then experienced between the viewer's body and the work of art. It 'happens' in the digital middle.

In the works of *Seeing Double*, looking becomes "active (and fully embodied)" (Hansen, *Postphotography* 61). Kentridge's imaging re-members²³ that perception "takes place in a rich and evolving field to which bodily modalities of tactility, proprioception, memory, and duration ... make an irreducible and constitutive contribution" (Hansen, *Postphotography* 59). Such a re-membering is amplified in digital imaging and, Hansen asserts, inaugurates "a fundamental shift in the 'economy' of perception from vision to bodily affectivity" (*Postphotography* 71). Following Henri Bergson, Hansen in fact argues that the economy which locates perception in vision is a false one. As Bergson reminds us, we "have to take into account the fact that our body is not a mathematical point in space, that its virtual actions are complicated by, and impregnated with, real actions, or, in other words, that there is no perception without affection" (58 qtd. in; Hansen, *Postphotography* 71).

Perception without affection, or the "radical disembodiment of perception," imagines an eye and brain that act only as "conception qua subtraction" in the selection and reflection of images and information (Hansen, *Postphotography* 57). Examples of this, says Hansen, can be seen in the common misreadings of Deleuze's analysis of cinema-based 'machinic vision.' Here cinematic perception (as well as that of the digital art theorists that follow film's trajectory) is seen to arise from the image, which is a "function of a purely formal technical agency" (Hansen, *Postphotography* 57). In other words, the ill-thought disembodied eye of the Renaissance is replaced by the machinic eye of the camera lens, which is in turn replaced by the sensor in the computer.

Hansen admits that "the selection of information is no longer performed exclusively or even primarily by the human component" (*Postphotography* 58).. In the posthuman perceptual regime brought about by technology, however, the lens or sensor does not 'see' for us – replacing this work for our eyes, minds and bodies – but rather makes available new and more possibilities for the understanding of, and investment in, a given image. He argues, "machinic vision must be differentiated from the automation of vision... [and] the human must be resituated in the space of this very difference" (Hansen, *Postphotography* 58). Whereas "automation seeks to replace human vision tout court,

²³ The break-down of the word "re-member" stresses the origins in the meaning of the word: to embody again.

machinic vision simply expands the range of perception well beyond the organic-physiological constraints of human embodiment” (Hansen, *Postphotography* 58). Like Virilio’s vision machines, Hansen contends that new media art, far from retracting from the body, or retracting from seeing ‘with’ the body, actually invests in “alternative... bodily underpinnings of human vision” (*Postphotography* 59).

Along with scholars such as Jonathan Crary, Hansen calls, therefore, for a “reconstruction of the technical history of vision,” one which puts the body, as whole, back into sight: a “shift from an optical to a haptic mode of perception” (*Postphotography* 57, 63). He advocates a Bergsonian reconfiguration of seeing that “is always mixed with affection and memory, [and the] bodily faculties that mark the positive contribution of the body to the process of perception” (Hansen, *Postphotography* 57). In this reconfiguration the “viewer is always already in the image, necessarily and inevitably positioned within a field of interacting images” (Hansen, *Postphotography* 58), and “perception... [is] itself a part of matter as a whole” (Hansen, *Postphotography* 57). This chapter and dissertation pick up on Hansen’s text: what we see and do as embodied entities, how we interact with and perceive our surroundings, collaboratively produces the world we engage.

2.7 *Of Disembodiment and Data Discourses in the New Mediascape*

In his careful analysis of how digital technologies and images enhance interactive and embodied relationships, Hansen is explicitly speaking back to one specific and dominant narrative within new media theory: that of disembodiment (whether it is seen as a crisis or something to be celebrated). His body of work has extensively critiqued studies of technology rooted in text (what he calls “the systemic-semiotic perspective” linked to “discursive-representationalist reason” (Hansen, *Technesis*)²⁴). Timothy Lenoir writes in the forward to Hansen’s second full-length book, “The intertwined themes of ocularcentrism and disembodiment have been central to critical studies of new media since its beginnings more than two decades ago. Of course, metaphors of vision and light have always been coupled with notions of abstraction and immateriality, but in an era saturated with computer-generated imaging modalities, the theme of disembodiment has taken on radical new dimensions” (XIII). This section gives a history to that discourse within new media in order to refute its claims.

²⁴ These could be understood as analogous to Lacan’s symbolic order, and a structural understanding of the world, respectively. Although Hansen uses these terms here to critique discussions around technology, they could also be linked to the culturally constructed body-image / explicit body ‘half’ of our experiences of the body, unpacked in detail in the following chapter.

William Mitchell asserts, for example, that, "A worldwide network of digital imaging systems is swiftly, silently constituting itself as the decentred subject's reconfigured eye" (57 qtd. in; Lenoir XIV). Vivian Sobchack speaks of electronic space as "a phenomenological structure of sensual and psychological experience that seems to belong to no-body" (Stone). Friedrich Kittler goes so far as to contend that with digital convergence human perception is becoming obsolete.²⁵

In her essay "Will the Real Body Stand Up?" Allucquere Rosanne Stone argues, via the work of Frances Barker, that the retreat of the body in the West into text, and/or brute physicality, is both being continued and refigured through the mediation of computing technology. This history of "disembodiment" in Western thinking can be traced from, amongst others, Plato "who argued that the world of the senses is a mere copy of an abstract reality" via Descartes who asserted "that certain knowledge can only begin when we remove ourselves as far as possible from the senses" (Bolter and Gromala 118). Like many other critics, artists and scholars in the field of new media, Stone contends that, "The discourse of visionary virtual world builders is rife with images of imaginal bodies, freed from the constraints that flesh imposes ... Forgetting about the body is an old Cartesian trick" (Real Body). Imaginal bodies abound, for example, in the dreams of disembodied brains in the artificial intelligence movement (especially in the pioneering work of Hans Moravec) and in the downloaded selves of the cyberpunk imaginary. It was given new life again with the creation of the world wide web and so-called "cyberspace" (Bolter and Gromala 119). Here the "myth of disembodiment" – "the [drive] to escape the limitations of the flesh" – finds its apotheosis in John Perry Barlow's assertion: "cyberspace is not where bodies live" (Bolter and Gromala 119-120). With both Barlow and Moravec, the metaphoric and literal retreat from the flesh goes hand in hand with the literal and conceptual ascension of transparency – light, abstraction and vision.

Perhaps the most influential treatise on, and critique of, our 'procedural disembodiment' through the Communication and Information Ages is Katherine Hayles' *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. She begins, "at the inaugural moment of the computer age, the erasure of embodiment is performed so that 'intelligence' becomes a property of the formal manipulation of symbols rather than enaction in the human life-world" (Hayles, Posthuman XI). In this avowedly

²⁵ In the foreword to *New Philosophies for New Media*, Lenoir uses a quote from Friedrich Kittler's *Gramophone, Film, Typewriter* to pose Hansen and Kittler as polar opposites (XVII-XVIII). While the latter argues that convergence will lead to a disappearance of flesh and objects, the former finds embodiment accented.

ironically titled book, Hayles completely rejects Moravec's proposal that "human identity is essentially an informational pattern" (Hayles, *Posthuman* XII). She refutes the idea that the manipulation of symbols, how we input / change / output data or informational patterns – whether these are in computer code, or linguistic or visual in nature – is what makes us human. We need bodies to practice consciousness, Hayles argues. She couples the disembodiment of intelligence with the now conventionally (and practically) accepted logic that informational data can exist without material form. It is not only humans that require materiality, she maintains, but also information.

Hayles' book attempts to illustrate the false logic that led to the contemporary misunderstandings surrounding embodiment and materiality. She unearths and describes the histories of computer and information theory through the eyes of its progenitors, and examines the relationships that led to human-computer interaction's dominant discourse. Here Hayles conveys just how fragile is the reasoning that underpins this discourse. She explores three "histories": how information lost its body, the cyborg body, and the posthuman, respectively. It is worth quoting why she pursues them in this way at length:

By turning the technological determinism of bodiless information, the cyborg, and the posthuman into narratives about the negotiations that took place between particular people at particular times and places, I hope to replace a teleology of disembodiment with historically contingent stories about contests between competing factions, contests whose outcomes were far from obvious. Many factors affected the outcomes, from the needs of emerging technologies for reliable quantification to the personalities of the people involved. Though overdetermined, the disembodiment of information was not inevitable, any more than it is inevitable we continue to accept the idea that we are *essentially* informational patterns (Hayles, *Posthuman* 22).

Central to Hayles' analysis is her unpacking of the "interrelations of different kinds of cultural productions, specifically literature and science" (*Posthuman* 24). She astutely avers, "Literary texts are not... passive conduits. They actively shape what the technologies mean and what the scientific theories signify in cultural contexts" (Hayles, *Posthuman* 21). In other words, decisions made about how to, for example, represent science textually or circumvent specific issues in the short-term, can and do shape future decisions (and conclusions) in any given field. By revealing the conditions under which historic 'decisions' about data and bodies were made, by illustrating that their

disembodiment was not a scientific conclusion brought about by experimentation, but rather a hypothesis whose proponents won a somewhat political and somewhat philosophical debate, Hayles is able to challenge what is now taken for granted, and the conventional wisdom built on top of, false assumptions.

Hayles argues that information lost its body around the time of the Macy Conferences, a series of interdisciplinary meetings held between 1946 and 1953 in New York,²⁶ which spawned many breakthroughs in systems theory. These conferences were at the cutting edge of science, and its core participants included leading mathematicians, engineers, psychologists and psychiatrists, anthropologists and sociologists, neurological physiologists and biophysicists, among several others. The goal was to set foundations for a general science of the workings of the human mind (American Society for Cybernetics). It was electrical engineer Claude Shannon²⁷ who first posited a theory of communication whereby information could exist in an immaterial form, and which merely needed a vessel to be transmitted. His paper, "A Mathematical Theory of Communication" (Shannon, *A Mathematical Theory of Communication*) introduced what is now called information theory, and it is considered by most thinkers in the field to be at the heart of the "digital revolution" – the microcontrollers and processors in our everyday technical gadgets owe a great debt to his work (Sloane, Wyner and Shannon).

To borrow from Lev Manovich, as the language of new media has infected the "cultural layer," so Shannon's model of immaterial information has now become conventional wisdom. In this model, argues Hayles, "Pattern is predominant over presence. From here it is a small step to perceiving information as more mobile, more important, more essential than material forms" (Hayles, *Posthuman* 19). Hayles warns us that if information (data) is seen as separate from and more important than materiality, then it can also be misconstrued as more fundamental. Seven years after her publication, this distortion is indeed still pervasive and mainstream. For example, in the February 2007 issue of *WIRED* magazine, an article entitled "What We Don't Know," examines "40 of the biggest questions in science" today (Gleick). One of these asks, "Is the universe actually made of information?" Using the foundations set forth by Shannon, alongside quantum physicist John Wheeler's work, James Gleick freely asserts that informational bits are

²⁶ With one exception – the Macy Conference in April 1953 was held at Princeton University, in New Jersey.

²⁷ Shannon is probably most famous for his Masters thesis, *A Symbolic Analysis of Relay and Switching Circuits*, which used Boolean algebra to first theorize the digital computer and circuit design.

likely to be the irreducible particles of existence.²⁸ The obvious question to ask Gleick is, how can something be both a particle and immaterial (information)? The two are mutually exclusive.

“Even in Shannon’s day,” Hayles asserts, “malcontents grumbled that divorcing information from context and thus from meaning had made the theory so narrowly formalized that it was not useful as a general theory of communication” (Hayles, Posthuman 19). She reminds us that although “it can be a shock to remember ... for information to exist, it must *always* be instantiated in a medium” (Hayles, Posthuman 13). A person with no pen or paper cannot write a letter; without a cell phone and signal, s/he cannot make a call; with no computer and network cable, there is no email. There is no such thing as a message without a signal, and no signal without matter and form. We think of data in much the same way we think of text: “as a conceptual abstraction rather than as an instantiated materiality” (Hayles, Posthuman 198). But just as texts and translations do not exist without pages and ink (or someone to speak them aloud), nor does data without radio waves, magnetic strips or hard drives.

To understand the dangers of such abstractions, it is again worth quoting Hayles at length in her description of what she calls the “Platonic backhand and forehand”:

The platonic backhand works by inferring from the world’s noisy multiplicity a simplified abstraction. So far so good: this is what theorizing should do. The problem comes when the move circles around to constitute the abstraction as the originary form from which the world’s multiplicity derives. Then complexity appears as a ‘fuzzing up’ of an essential reality rather than as a manifestation of the world’s holistic nature. Whereas the Platonic backhand has a history dating back to the Greeks, the Platonic forehand is more recent. To reach a fully developed form, it required the assistance of powerful computers. This move starts

²⁸ In fairness to *WIRED* and its editors, Wheeler did famously postulate “It from Bit,” and explains his theory in a free-form essay, as follows: “every it – every particle, every field of force, even the spacetime continuum itself – derives its function, its meaning, its very existence entirely - even if in some contexts indirectly - from the apparatus-elicited answers to yes-or-no questions, binary choices, *_bits_*” (End of Science). But note Wheeler’s carefulness in constructing a system that folds back on itself; here, the questions it generates also birth and perpetuate it – continuously and implicitly, in all its forms. “Is the universe actually made of information?” is thus misleading; after Wheeler wrote “All things physical are information-theoretic in origin,” he was quick to add, “and this is a participatory universe” (Gleick, 2007). The latter half of the statement suggests both a potentially performance-based origin (also suggested by Hayles’ “flux,” discussed in Chapter 3) and a more nuanced ‘chicken/egg’ incipience (we participate to exist / we must exist to participate).

from simplified abstractions and, using simulation techniques such as genetic algorithms, evolves a multiplicity sufficiently complex that it can be seen as a world of its own. These two moves thus make their play in opposite directions. The backhand goes from noisy multiplicity to reductive simplicity, whereas the forehand swings from simplicity to multilicity [sic]. They share a common ideology – privileging the abstract as the Real and downplaying the importance of material instantiation. When they work together, they lay the groundwork for a new variation on an ancient game, in which disembodied information becomes the ultimate Platonic Form. If we can capture the form of ones and zeroes in a nonbiological medium – say, on a computer disc – why do we need the body's superfluous flesh? (Hayles, Posthuman 12-13)

"When information loses its body," Hayles cautions, "equating humans and computers is especially easy" (Posthuman 2). It was not long before the Macy Conferences called neurons "processors," and henceforth, "humans were to be seen primarily as information processing entities who are *essentially* similar to intelligent machines" (Hayles, Posthuman 7). In other words, after information lost its body, so did we.

"No one suggests," says Hayles, "that because atoms are mostly empty space, we can shuck the electron shells and do away with occupying space altogether" (Posthuman 12). And yet cultural narratives and technological histories abound with a "comparable fantasy" that because we are information, "we can do away with the body" (Hayles, Posthuman 12). But information, like us, "cannot exist apart from the embodiment that brings it into being as a material entity in the world, and embodiment is always instantiated, local, and specific" (Hayles, Posthuman 49). Neither bodies nor information can exist without some form of materiality, and embodiment and intelligence encompass far more than informational processing. As Hayles reminds us, the stakes in remembering this are high: while data can be replicated or brought back, embodiment and the material world cannot be replaced.

2.8 Being Bodily

The discourse of disembodiment (and of immaterial information) that is, as Hayles cogently shows, so pervasive in computational and new media theorizing, is reinforced in discussions of digital arts in which the art works are explored as instantiations of data observed by a disembodied eye. While it is certainly true that "compared to the analogical

arts – which are always instantiated in a fixed, Euclidean space – the digital arts seem abstract, ephemeral, without substance,” this sense of “becoming immaterial” is contingent on two misrecognitions (Rodowick 212). Firstly, a misrecognition of the “question of materiality [and embodiment] in relation to technology” and, secondly, a misrecognition in which the unravelling of “spatial coherence” is read as a “desubstantialization” (Rodowick 212-213).

This section follows those new media scholars who have, in recent years, revisited the ideas of ocularcentrism, immateriality and disembodiment in relation to technology to argue its inverse, especially with regards to interactive body art. New media and digital art can, and may, challenge us to explore anew the relation of body and technology without returning to the narratives of disembodiment and immateriality.²⁹ It reminds us that “electronic digitality, far from eviscerating the real and occluding the body, invests in bodily affectivity. As such, it has the capacity to go beyond the aesthetic perception of the object” and engender a “non-representational experience” (Ridgway, *In Excess*).

Technologies affect what it means to be an embodied agent and, as such, we need an approach to digitality that acknowledges affect, perception, bodiliness and cognition. For Hansen, as for others, it is in digital art that this approach is being explored, modelled and challenged. Hansen argues, for example, that in the work of artist Char Davies vision becomes haptic (that is, it relocates visual sense-making to touch) but not as a modality of vision (meaning perception). Rather, the haptic in digital art is transformed into a modality of sense (affection). Affectivity, he says, is not a mode of perception – perception appeals to structures already constituted, whereas affectivity indicates a relation and an emergence.³⁰

Davies’ work, *Osmose* (1995, see Figure 7, below), maintains Hansen, is exemplary of the way in which digital art makes primary the “affective and introceptive sensory processes that generate a ‘haptic spatiality,’ an internally grounded image of the body prior to and independent of external geometrical space” (Lenoir XXIII).

²⁹ Bearing in mind of course the caveat that even theorists such as Derrida, Bourdieu, and Baudrillard, are all engaged, asserts Hansen, in a common pattern of reduction – what he calls technesis – “in which a stated interest in embracing technological materiality is compromised in order to safeguard the integrity and autonomy of thought and representation” (Lenoir XIX).

³⁰ See Hansen’s *New Philosophy for New Media* (224-229), for more on affection and the haptic.



Figure 7, 2D stills from the 3D virtual and interactive world in Char Davies' *Osmose*

Davies describes her piece as

an immersive interactive virtual-reality environment installation with 3D computer graphics and interactive 3D sound, a head-mounted display and real-time motion tracking based on breathing and balance. *Osmose* is a space for exploring the perceptual interplay between self and world, i.e., a place for facilitating awareness of one's own self as consciousness embodied in enveloping space. (*Osmose*)

Viewer-participants literally breathe life into Davies' 3D world (combining images, sound and text), and navigate it using the simple angling of their torsos. Each is strapped into a custom vest outfitted with motion and tilt sensors, as well as the standard Head Mounted Display (3D goggles) employed in most VR. As they slowly exhale, their chest cavities emptying of air, trees and poetry sprawl out, in sculptural waves, around them in the virtual realm. They float or fall, turn and dive, using a combination of slow and fast breathing, and leaning into space with their bodies. What at first seems an awkward combination of actions that affect both the world around them and how they navigate it, quickly becomes a heightened sensitivity to and awareness of the complex embodied interactions always at play in the everyday.

Hansen says that Davies' work foregrounds "the function of bodily modes of experience" and cites Niranjana Rajah's assertion that it resists a "simulation of perspectival space," instead attempting "to heal the rift between vision and body" (*Bodies* 110; Rajah). She relies not on joysticks or touch pads for her interaction, nor direct visual feedback using cameras, but instead employs that which is often subconscious in our movements towards growing and shifting the space around us. The piece "teaches us how to orient ourselves without needing to see ourselves" and "temporarily deautomate[s] habitual perception" through "a fluid, ongoing, active interchange with the environment"

(Hansen, *Bodies* 111-112). Hansen avers, “the living body exceeds the boundaries of the skin and encompasses parts of the environment” (*Bodies* 112).

Osmose is, in Grau’s sense, an immersive image; but it is also, according to Hansen, one that we experience (via analogy) as something felt in our bodies. As such, the work situates the viewer-participant between “the machinic space of the image and the normal geometric space of visual perception” (Hansen, *New Philosophy* 203). It therefore opens a non-representational and non-visual space that fosters the affective and proprioceptive experience of the body.³¹

New media theorist and philosopher Brian Massumi has also argued for explorations of movement and sensation in philosophy and art. Like Hansen, he distinguishes between perception on the one hand, and affective and proprioceptive experience on the other. Perception, he writes, is an “object-oriented experience” that “pertains to the stoppage- and stasis-tending dimension of reality” (Massumi 258). It is, in practice, about segmentation and qualification and, as such, is a “qualified intensity” (Massumi 28). Perception, for Massumi, relates to our conscious understandings of, for example, what we ‘feel.’ Affect is an autonomous, preconscious, bodily response, including all sensual response. Proprioception is

the sensibility proper to the muscles and ligaments... [including] tactile sensibility (which is ‘exteroceptive’) and visceral sensibility (which is ‘interoceptive’). (Massumi 58)

Tactility (exteroception) is the “sensibility of the skin as surface of contact between the perceiving subject and perceived object” (Massumi 58) while viscerality (interoception) is sensitivity to stimuli originating inside of the body. “Proprioception” Massumi says, “folds tactility into the body”. It tells the body how to be affected. It

translates the exertions and ease of the body’s encounters with objects into a muscular memory of relationality... At the same time as proprioception folds tactility in, it draws out the subject’s reactions to the qualities of the objects it perceives through all five senses, bringing them into the motor realm of externalizable response. (Massumi 58-59)

³¹ Hansen calls this a “digital affection-image,” a digital image that “unfolds in and as the viewer-participant’s bodily intuition of the sheer alienness of [its] forms” (*New Philosophy* 204).

For Massumi, affect and proprioception, which together make up “sensation,” are always an unfolding, an openness and bodiliness that are outside of conscious reflection on or understanding of the body. While perception is “exo-referential (extensive); sensation is endo-referential or self-referential (intensive)” (Massumi 259). This does not mean that sensation (affect, proprioception, sensibility, etc) is completely without thought. The two feed into one another, perception qualifying sensation and thus shifting how we sense, as we sense, which in turn transforms that which we sense. As Hayles would likely argue, giving information back its materiality, giving intelligence back its body, exploring the intensive rather than the extensive (as this dissertation argues digital art enables), does not mean retreating from ideas and concepts entirely. Investigating sensation, similarly, does not mean retreating from perception.

To concretize what he calls the “sensible concept” (Massumi 89) of the thinking body (the body in sensation, in the intensive mode and in process), Massumi turns to the work of Australian performance artist, Stelarc. From his earlier works, where Stelarc suspended his body from gallery ceilings or outdoor cranes using steel cables and large hooks that pierced his skin, to his latest projects that incorporate electro-mechanical and/or biological prostheses, Stelarc has, “with the use of harsh procedures, [re-examined] the body itself and its representation” (Kunst). In “contact with new technologies” (Kunst), he blurs the distinction “between what an organism is and what a mechanism is” (M. J. Jones).³²

In Stelarc’s work we encounter the “physical experience of ideas” and the “body as concept,” and Massumi takes up the challenge of writing how Stelarc performs a “joining [of] the body and thought” (Massumi 89-90). “This requires,” Massumi asserts, “a willingness to revisit some of our basic notions of what a body is and does as an acting, perceiving, thinking, feeling thing” (90). Rather than impose an outside frame onto Stelarc’s art, Massumi as art-writer feels he must “approach the work on its own terms”: Stelarc’s ideas are “manifested” only through his performances and, like the body, “do not preexist their physical expression” (Massumi 89-90).³³

Where Massumi’s case study concentrates mostly on Stelarc’s suspensions, here I turn to the artist’s later work, *Ping Body* (1996, see Figure 8, page 40). In this piece,

³² Spanning live performance and internet art from the 1970s to the present, Stelarc provides an interesting bridge between the performance of the explicit body and the digital performance of the implicit body, distinctions that will be made clear in the next chapter.

³³ More on the relationship between performance and embodiment will be detailed in the following chapter.

Stelarc performs a co-original relationship between the Internet and his own body. Stelarc's embodied activities are merged with disembodied online relationships in such a way that each is enacted only through its connectivity and reciprocity with the other. Here Stelarc adorns his barely clothed body with a multitude of wires, at the end of which sit electrical-stimulation nodes; the flex and extend muscles across his arms, legs, shoulders and

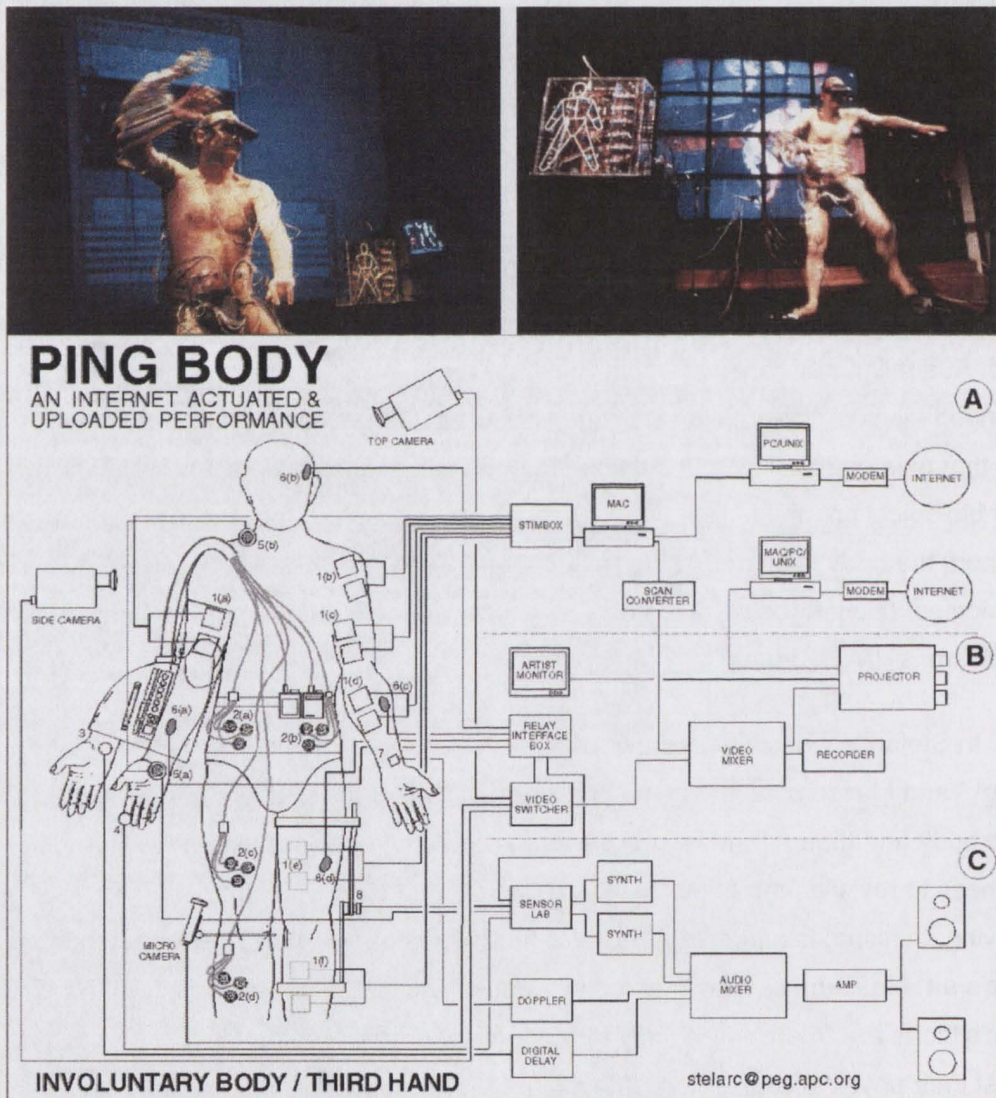


Figure 8, Ping Body documentation and diagram, Dynamic Performance by Stelarc, 1996

thighs – the actions of all his natural appendages, and thus also his movement across space – are controlled by the system. This system is, in turn, controlled by online participants from around the world. Three international locations are “electronically linked through a performance website allowing the audience to remotely access, view and actuate Stelarc's body,” which is “based at the main performance site” (Stelarc). The artist

is controlled through an uncoordinated public collaboration, jumping and flailing and kicking across the stage like an en fleshed marionette.³⁴ As Stelarc involuntarily moves in response to electronic stimuli, he uploads real time photos of the performance, and his audience responds in kind, indirectly interacting by tweaking their clicks and browser refreshes, playing out networked media and embodied activities all at once.

In addition to this feedback loop between the body of the artist and a participating public, Stelarc adds an “extra” appendage to the *Ping Body* performance: his *Third Hand*. This is a robotic arm that is controlled with sensors attached to the artist’s abdomen; after years of practice, Stelarc can move each finger individually and direct it almost as if it were his own. In *Ping Body*, Stelarc’s cyborg hand is the only part of his body that he can himself still control; this is what he uses to upload images to the Internet and otherwise collaborate with his viewers online.

It is worth citing Stelarc’s reflection on his work at length:

During the *Ping Body* performances, what is being considered is a body moving not to the promptings of another body in another place, but rather to Internet activity itself – the body’s proprioception and musculature [are] stimulated not by its internal nervous system but by the external ebb and flow of data. (*Ping Body*)

By sending random ‘pings’ from Stelarc’s system to the participants currently watching the performance on their computers, and “measuring the echo times” – how long it takes for those pings to return to the site of the performance – “it is possible to map spatial distance and transmission time” (Stelarc). This data indicates “both distance and density levels of Internet activity” and is then “used to activate [the] multiple muscle stimulator” (Stelarc).

Thus ping values that indicate spatial and time parameters of the Internet choreograph and compose the performances. A graphical interface of limb motions simulates and initiates the physical body’s movements....

The *Ping Body* performances produce a powerful inversion of the usual interface of the body to the Net. Instead of collective bodies determining

³⁴ For some sample video documentation of a *Ping Body* performance, see <http://framework.v2.nl/archive/archive/leaf/other/.xslt/nodenr-140073>

the operation of the Internet, collective Internet activity moves the body. The Internet becomes not merely a mode of information transmission, but also a transducer, effecting physical action. (Stelarc)

What Stelarc performs in *Ping Body*, this section argues, is a thinking and being-together of body and information, materiality and thought, activity and relationality. Digital art, Stelarc shows us, has the potential to amplify bodiliness in a way that exceeds the conceptual frames of language and visuality; and new media must re-member the body as actively co-created with the world through their mutual interactions. Here body is a dimension of the real but is not a materiality that precedes construction and discourse. Concepts and sensations emerge together, as sensible concepts. While undoubtedly material, the body, argues Massumi, needs to be thought of as an event not a thing: an unfolding actualization and infolding potential (14, 35).

With Massumi, we have to think the body neither as naïve realism nor subjectivism, neither as concrete materialism nor linguistic text, but rather as “in motion ... in an immediate, unfolding relation to its own nonpresent potential” (Massumi 4). Massumi asserts that this relation is “never present in position, only ever in passing ... a body in its indeterminacy (its openness to an elsewhere and otherwise than it is, in only here and now)” (5).³⁵

This thinking of the body means accepting the “paradox that there is an incorporeal dimension to the body.”³⁶ Like matter and energy, the corporeal and incorporeal are “mutually convertible modes of the same reality... a phase-shift of the body in the usual sense, but not one that comes after it in time.... Always accompanying. [A] Fellow-travelling dimension of the same reality” (Massumi 5). Here the body – both its corporeal and incorporeal dimensions – is an incipient, inter-acting agent whose “movement, affect [and] sensation” in and with the world continuously redefine what and how it is.³⁷

³⁵ Rosi Braidotti reads Deleuze and Nietzsche from a feminist perspective to explore embodiment as emergent, rhizomatic, interrelated, as an interface of forces. Here affectivity is pre-discursive - not as a “before” but as an unthought/non-thought within thought. See *Nomadic Subjects: Embodiment and Sexual Difference in Contemporary Feminist Theory* (166).

³⁶ Again following Deleuze, here Massumi references the philosophical conception of virtuality: that which is not material, but nonetheless real.

³⁷ These three words are the subtitle to Massumi’s book, *Parables for the Virtual: Movement, Affect, Sensation*.

The rethinking of embodiment that Massumi (and Hansen, Hayles and others) encourages is an essential part of the rethinking this dissertation proposes for interactive art (which in turn again rethinks embodiment). Digital artists like David Rokeby, Theodore Watson, Char Davies and Stelarc provide possible platforms for understanding interactivity and embodiment, together, and outside of the hegemony of visual signification. The following chapter picks up on this possibility; it outlines contemporary embodiment theory and puts it in the service of an “implicit body” approach to interactive art.

3 The Implicit Body

3.1 Introduction

Anthropologist Marilyn Strathern argues that, while a step in the right direction, seeing vision as inherently embodied will not necessarily advance understandings of embodiment. Reinstating “the body” as “the medium” of vision, she argues, makes it an explicit thing, and “seems to share with rather than obviate an earlier representationalist obsession with uncovering facts about the world” (Strathern, OLG 243).³⁸ Strathern avers that the body is “deliberately incomplete” because it is an ongoing series of relations (OLG 243).³⁹ She warns, it would be a mistake to think we know what a body *is* when we see one.

Echoing Strathern’s concern, albeit in a very different context, Brian Massumi wants to find a way to engage with the body outside of language and vision without “contradicting the very real insights of poststructuralist cultural theory” (4). “Our entire vocabulary,” he says, “has derived from theories of signification that are still wedded to structure even across irreconcilable differences” (Massumi 27). He doesn’t wish to undo the important work of cultural studies’ linguistic model for understanding race, gender, class or other forms of identification, but is looking for “a semiotics willing to engage with continuity,” a processual approach to embodiment (Massumi 27). Following Gilles Deleuze, who follows Henri Bergson, Massumi points out, “When a body is in motion, it does not coincide with itself. It coincides with its own transition: its own variation.... In motion, a body is in an immediate, unfolding relation to its own... potential to vary” (4-5). In contradistinction to pre-existing structures (be they genetic or linguistic), Massumi avers that “the body is in a state of invention” (103). It is “an accumulation of relative perspectives and the passages between them... retaining and combining past movements,” continuously “infolded” with “coding and codification” (Massumi 57, 98, 83).

Massumi’s *Parables for the Virtual* is, overall, a philosopher’s plea; he implores us to put “movement, sensation, and qualities of experience” back into our understandings of

³⁸ For the sake of the argument presented here, this quotation is decontextualized from a critique of specific “feminist quests” that try (and fail) to escape dominant Western understandings of embodiment.

³⁹ In Strathern’s examination of Hagen cosmology – in which persons are understood to be entities with relations integral to them – what is seen as a “body” is what is brought forth as an outcome of relations. Here, persons are “fractally realized” rather than essentially determined (OLG 250).

embodiment (Massumi 4). He asks us to re-member⁴⁰ how the experience of the body is not only that of its external construction or inscriptions (and thus only understood through Saussure's linguistics or Lacan's Symbolic Order, for example) but also of its passage. "It moves. It feels. In fact, it does both at the same time. It moves as it feels, and it feels itself moving. Can we think a body without this: an intrinsic connection between movement and sensation, whereby each immediately summons the other?" (Massumi 1). Massumi beckons us towards an embodiment that includes a moving, thinking, feeling body, which is more than its inscriptions and significations. Like the artists examined in this dissertation, Massumi plays with "affirmative methods," "productivism" and "inventiveness" in his writing, to disrupt, and add insight to, the dominant discourse surrounding embodiment in the humanities (Massumi 12-13). As Katherine Hayles asserts, "One contemporary belief likely to stupefy future generations is the postmodern orthodoxy that the body is primarily, if not entirely, a linguistic and discursive construction" (Posthuman 192). Massumi instead attempts to work with the body as a continuously unfolding and infolding (and material) event.

This dissertation is a thinking-through of the unfolding and infolding of the body in interactive art; it argues that here 'the body' is addressed and enacted through performance, and 'in relation.'⁴¹ It unpacks how such work can enhance, disrupt and alter experience and action in ways that call attention to our embodied relationships with the world. The focus is not on new vocabularies (whether Massumi's "semiotics willing to engage with continuity" (27), or taxonomies for digital creations), but rather, a new framework for the critical exploration of interactivity and embodiment in contemporary art. As discussed in Chapter 2, this framework suggests that new media enhances the ability to intervene in, and challenge, not only the construction of bodies and identities, but also the ongoing and material process of embodiment itself. This chapter develops this analysis further and asks, "How might the body – as process, as continuity, as event – and its potential disruption, be attendant, provoked and contextualized in interactive art?"

Following this Introduction, Section 3.2 uses the Zeno paradox to define and unpack Massumi's structure/continuity distinction, and introduces Merleau-Ponty's body-image and body-schema to further explore the idea of the body as continuously

⁴⁰ As in the last chapter, re-member stresses the origins in the meaning of the word: to embody again.

⁴¹ Here relationality is explored materially and in the active flesh, rather than (or sometimes in addition to) sociopolitically, as in Nicolas Bourriaud's *Relational Aesthetics* (discussed in greater detail later in this chapter). For example, while relational aesthetics might be concerned with interpersonal relationships, Chapter 6 of this dissertation instead looks to intercorporeality.

embodied, as in process. After that, Section 3.3, "The Body as Per-formed: emergence, potential and relationality," uses contemporary theory from performance and cultural studies, science and philosophy, to elucidate performance as a metaphor for both embodiment and interactivity. Section 3.4, "Art Interventions: from the Explicit to the Implicit (bodies in quotes)," brings these two sections together, illustrating how performance art has historically been used to provoke questions about the body-image, and suggesting digital art be used to interrogate the body-schema. Section 3.5, "The Art Event: situation and performance," proposes the concept of the implicit body, deployed as a way to explore interactivity as embodiment, and to think through the relation of the two. And Section 3.6, "A Relational Approach," compares and contrasts the implicit body's approach to relationality to that of "relational aesthetics" in contemporary art before continuing to Chapter 4's application of these ideas as a critical framework for interactive art.

3.2 *The Body-Image and The Body-Schema*

When this chapter refers to 'the body's continuity,' it is both a conceptual and material reference to the body's movement and flux (continuity), as opposed to its stasis and stability (discontinuity). I follow Massumi who follows Henri Bergson (who is in turn following Aristotle, among others) in using the Zeno paradox to illustrate how contemporary theory often misreads movement as serial points of stasis (see Figure 9, page 48). Here Zeno's infamous arrow flies through the air, but never gets to its target. The paradox says that in order for his arrow to reach the bull's eye, it must first get halfway there; it must also get halfway to that halfway mark; and halfway to that, and so on. Inevitably, the arrow must move through an infinite number of markers, thus making it impossible to reach its goal.

Of course movement does not work this way, and nor does continuity. To map out all the possibilities through which the arrow must travel in order to reach its goal is to see the arrow as only going between many points of stasis, rather than as in motion. It only 'is' when it 'isn't doing.' Accordingly, now imagine many arrows' paths across 3-dimensional space: post-event, completely mapped-out points of stasis turned into a uniform grid of mediated, understood, unmoving, and ultimately limited possibilities. This, Massumi tells us, is how we have unfortunately come to view the Subject, and the body, through contemporary theories of construction.

The Zeno Paradox: traveling between static points

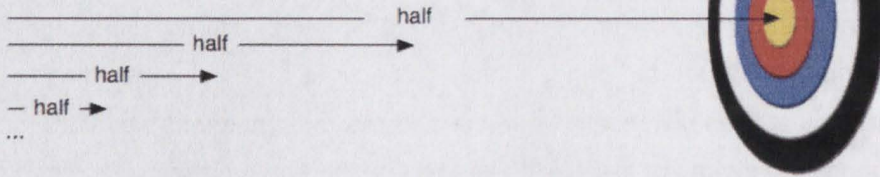


Figure 9, Zeno Paradox illustration

Cultural studies has shown that examining and challenging the body's stop-points – those illustrated in the Zeno paradox – can indeed be extremely productive; Judith Butler, for example, questions the essentialized identities (and essentially static attributions) of race and gender with the images and inscriptions constructed through social practices.⁴² But we must also be open to examining and challenging the body's movement (as moving) and continuity (as continuous). We could, for example, confront the broader field of 'differentiation,' which itself is not static, or 'embodied experience,' which, as Massumi contends, is similarly continuous.⁴³

Hansen is also interested in re-thinking the constructionist approach to the body. He turns to the early phenomenology of Maurice Merleau-Ponty to explore the distinction between the 'body-image' and the 'body-schema' as useful in this re-thinking, and this chapter will in turn apply it to contemporary art. The body-image is an "observational" understanding of the body and identity, the constructionist approach applied by theorists such as Butler, Jacques Lacan and Elizabeth Grosz (which is derived from a Freudian source) (Hansen, *Bodies* 13). It is a "predominantly visual representation of the body, a primary resemblance" (Hansen, *Bodies* 37). The body-schema, on the other hand, is akin to Massumi's body in motion; it is a "preobjective process of constitution" (Hansen, *Bodies* 39).

Whereas the body-image characterizes and is generated from a primarily visual [or language-based] apprehension of the body as an external object, the body-schema... lies in the interactional domain specified by embodied enaction (Hansen, *Bodies* 38-39).

⁴² See *Gender Trouble: Feminism and the Subversion of Identity* (Butler).

⁴³ This dissertation, and chapter, is careful neither to devalue the work of cultural theorists such as Butler, nor to fall into the trap of an essentialist or naturalist notion of an a priori body.

While the body-image sits in the “observational perspective,” the body-schema “emerges from ... the *operational* perspective” (Hansen, *Bodies* 39 my emphasis), through relational activity (i.e. interaction).

The cognitive science and philosophy duo, Shaun Gallagher and Jonathan Cole, assert that the body-schema is “a system of motor and postural functions that operate below the level of self-referential intentionality,” and Hansen builds on this, saying that it is a “*prepersonal* sensory being-with” (Gallagher and Cole; Hansen, *Bodies* 21). It includes nonconscious, sensorimotor perceptions and actions, the parts of our bodies that we may or may not be aware of, which are activated when we move and interrelate in and with our surroundings.

We might say that the body schema... forms an infraempirical form: one that is immanent to bodily life without being reducible to its empirical contents; moreover... the body schema involves vision and touch (along with the other senses) in an irreducible co-functioning that, in and of itself, indicts the more abstract, visual conception of the body-image.
(Hansen, *Embodying VR*)

And, as alluded to above, although the body-schema involves the senses, it does not address perception alone. “Far from being a mediator between the subject and the environment that would condition bodily activity” (and far from being an image as it is for Lacan, Butler and Grosz), the body-schema “is cosubstantial with the activity of the body,” and, as such, “is dynamically constitutive of the spatiality of the world” (Hansen, *Embodying VR*). Hansen draws attention to the constitutive role the body plays in “producing and maintaining ... experience,” and even goes so far as to suggest that the body-schema is the entire “scope of body environment coupling” (Hansen, *Embodying VR*; Hansen, *Bodies* 20).

As called for in the last chapter, this conception of the body-schema resonates with the potential for thinking beyond the optical and projective. In other words, the body-schema is not simply an effect of representations, even bodily representations; it is actively generative of space as well as the body. It is “a flexible, plastic, systemic form of distributed agency encompassing what takes place within the boundaries of the body proper (the skin) as well as the entirety of the spatiality of embodied motility” (Hansen, *Bodies* 38). Massumi says that this kind of conception, that of an ‘imageless’ spatiality of

the body,⁴⁴ “is less a space in the empirical sense than a gap in space that is also a suspension of the normal unfolding of time... [it] is the involution of subject-object relations into the body of the observer and of that body into itself” (57). Here the body’s continuity, sense, movement and relationships to the world are precisely what constitute both the body *and* the world. Through its movements and interactions, the body-schema engenders a horizon in spatial-temporal location (an interval), in which the advent of the subject is simultaneously the advent of the object.

It is vital to note at this point that the division into body-image and the body-schema should not be equated with the classic Cartesian split of mind and body.⁴⁵ In this thesis, consciousness is *part* of the body, and *both* image and schema *are* the body (as well as its spatiality, its far-reaching interactions with the world). The body-image is a reflection on and an understanding of the body – derived from images and inscriptions – and the body-schema is generated through interactive experience – between body and world, but outside language or consciousness. And while it is useful to think of the two, lest we forget one or the other, they are intrinsically coexistent and co-original as an inseparable feedback formation. Embodiment – “the process through which bodies are produced” – and exteriority – what Hansen calls “technicity”⁴⁶ – are transductions: “neither one is the cause of the other” (Hansen, *Bodies* 79).⁴⁷ Body-image and -schema are merely heuristic devices that help to conceptually engage with embodiment.

In her *How We Became Posthuman*, Katherine Hayles also makes a heuristic distinction between two understandings of the body: one which she later interrogates and challenges herself, in her paper, “Flesh and Metal.” The difficulty of engaging with embodiment conceptually in its complex transductions between static, inscriptive, representational stop points and its interactive, experiential incipience is cogently addressed in this 2002 reflection on her 1999 book. In order to engage with embodiment and avoid the Cartesian mind-body split, Hayles says, she made “a distinction between

⁴⁴ Massumi calls this the “body without an image” (57).

⁴⁵ Nor, for that matter, between the literal and figural, actual and representational.

⁴⁶ With his term technicity, and throughout his book, *Bodies in Code*, Hansen directly ties technology to both the body-image and body-schema. He defines technicity as exteriority and exteriorization, the body-image constructed using technologies external to the body. Embodiment and the body schema, on the other hand, refer to “a body whose... constructive or creative power is expanded through new interactional possibilities”; they interact with technology in and as the process of constitution (IX, 38).

⁴⁷ This is a reference to French philosopher Gilbert Simondon’s work on transduction and individuation, which calls attention to the always incomplete subject interacting with technology. See, for example, *L’individu et sa Genèse Physico-biologique (L’individuation à la Lumière des Notions de forme et D’information)*.

the body and embodiment” (Hayles, *Flesh and Metal* 297). The body is, she suggests, “an abstract concept which is always culturally constructed” (Hayles, *Flesh and Metal* 297) and is “naturalized within culture” (Hayles, *Posthuman* 196). Our experiences of embodiment, on the other hand, may be constructed but are never entirely so, as they “emerge from the complex interactions between conscious mind and the physiological structures that are the result of millennia of biological evolution” (Hayles, *Flesh and Metal* 297). Embodiment is “contextual, enmeshed within the specifics of place, time, physiology, and culture” and it never coincides exactly with ‘the body’ (“however that normalized concept is understood”) (Hayles, *Posthuman* 196). But, our experiences of embodiment continually interact with cultural construction of the ‘the body.’ They are “two sine waves moving at different frequencies and with different periods of repetition” (Hayles, *Posthuman* 198). They collide and interfere with one another to make what we understand as bodiliness.

Despite understanding the body and embodiment as dynamically interacting, the analytical distinction between the two, Hayles says, caught her up in “dualistic thinking” nonetheless (*Flesh and Metal* 298). Moving out of dualism requires moving away from seeing bodies “as static objects precoded and prevalued” and rather as “the visible results of the dynamic on-goingness of the flux” (Hayles, *Flesh and Metal* 298). It is not that the body and embodiment interact, but that the body and embodiment emerge from the interactive flux. This flux is most closely allied with the body-schema in Hansen et al’s conception.

Regardless of the differences in their concepts, metaphors and ways of thinking through the complexities of body-thing and embodiment-flux, Massumi, Hansen and Hayles⁴⁸ each argue for an understanding of the body that is dynamic rather than static, “relational” but “not... relative” (Massumi 280). If we approach the body/embodiment as relational, then it is also emergent: it only *is* through its ongoing, continuous enaction, through its interactive relationships. It is not a series of plottable points (like Zeno’s arrow), but is, to use another figure from mathematics, topological. Like an animated Möbius strip, the body *is*: ‘in and around’.⁴⁹

⁴⁸ Along with the aforementioned Bergson, Merleau-Ponty, Gallagher and Cole, and others such as Jose Gil (*Metamorphoses*), Gilles Deleuze (*Thousand Plateaus*) and Alain Milon (*Réalité Virtuelle*).

⁴⁹ The Möbius strip was chosen for this analogy because it is the simplest (and most well-known) topological form. Like the Klein bottle, the Möbius strip is actually a Euclidean topological figure (precisely why it is easier to understand than its non-Euclidean counter-parts); most topologies are non-Euclidean.

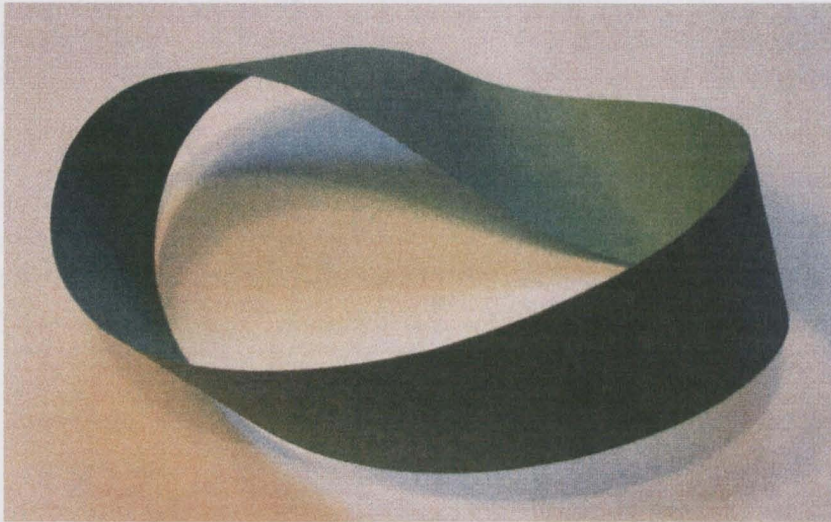


Figure 10, Möbius strip, photo by David Benbennick (GNU Free Documentation license)

A Möbius strip can be produced by twisting a strip of paper and looping and attaching its ends (see Figure 10, above). It is a one-sided surface with only one boundary component, which is available in three dimensions. It thus lives in both 2- and 3-D space, is greater than the sum of its parts. Massumi explains that a topological figure such as the Möbius strip is a “dynamic form [that] is neither accurate nor fully visualizable. It is operatively vague... a qualitative space of variation referenced only to its own movement...” (183). Topology, says Massumi, “is the science of self-varying deformation” (134). As a mathematical area of study, it “is not empirical, if empirical investigation is meant as progressing from description to prediction. It has no predictive value.” A topological figure is incapable, he asserts, “of directly referencing anything other than its own variations” (Massumi 135).⁵⁰

Both Massumi and cultural theorist Elizabeth Grosz⁵¹ “conceptualise the body as a two-dimensional topological figure, a membrane open to the outside. In Massumi’s opinion this means that we do not live in Euclidean space, but in between dimensions” (John Wiley & Sons 83).⁵² Here the body generates “a surplus-effect... due to a

⁵⁰ In Massumi’s original text, here he interweaves an understanding of topology and the analogue (which he defines as continuous process), with transformation and virtuality. See his chapter, “On the Superiority of the Analog,” in *Parables for the Virtual*.

⁵¹ See *Volatile Bodies: Toward a Corporeal Feminism* (Grosz).

⁵² It is worth noting that Elizabeth Grosz’s use of the “Möbius strip in which outside becomes inside becomes inside becomes outside,” to conceptualize the body is critiqued by Katherine Hayles in her 1999 book, *How We Became Posthuman*. The latter says that a topological figure makes it “difficult to chart gradations within the continuum,” and she instead suggests an “interplay between two intersecting axes... the field itself is generated by the interplay between these end points.” Hayles makes the case that the “polarities defining the end points of the axes acknowledge the

transitional excess of movement" (Massumi 185). Massumi's "topological figure in the flesh" (Massumi 183), like Grosz's Möbius strip understanding of the body, in- and unfolds with the outside precisely through its "expandable and pliable nature of our corporeal schemata" (Richardson 231). We are always of the relation, asked to engage with "new ways of understanding how our spatial topologies and bodily boundaries are continually reinvented" through movement and interaction (Richardson 231). The one side that is the same side that is the other side of the Möbius strip could be taken as both the body and the world – each is open to the other.

This reading of the body as topological, as relational and interactive, opens possibilities in embodiment discourses that go well beyond Strathern's wariness of simply reinstating the body from behind vision. It moves cultural theory out of its "representationalist obsession" and into a space where it understands embodiment as "deliberately incomplete" (Strathern, OLG 243). This chapter asserts that the discourses surrounding interactive art would benefit greatly from a similar move. While we have critical production models and visual vocabularies for making and reading art that challenges the body-image (the stop-points of the body, the representational), we need to also find ways of engaging and interrogating the body-schema (the incipient, the topological, the relational). A key metaphor this dissertation appropriates in order to apply this understanding of embodiment to contemporary interactive art is that of 'performance.'

3.3 *The Body as Per-formed: emergence, potential and relationality*

Richard Schechner is largely credited with opening up performance as a figure of thought, using a combination of anthropology, cultural theory, postmodern reflection, and his practice as a theatre director. Performance, he says, "is a very inclusive notion of action; theatre is only one node on a continuum that reaches from ritualization in animal behavior (including humans) through performances in everyday life – greetings, displays of emotion, family scenes, and so on – to rites, ceremonies and performances [as] large-scale theatrical events" (Schechner, *Essays* 1). Various interdisciplinary theorists have called performance (and this is by no means an exhaustive list) "processual" (Zarrilli, *DPS*

historical importance of dichotomies" (195-196). In addition to the fact that Hayles later critiques her own separation of body and embodiment (*Flesh and Metal*) – perhaps rendering this analogy of intersecting axes moot – I would rebut her in saying that our understandings of history and future (the supposed end points of her axes) also feed back into, and would be affected by, the field in the centre. Further, in the specific case of the body-schema, it is precisely because we want to look at continuity (the Möbius 'continuum') and *not* 'gradations' (Zeno's stop-points, which might lie between, or at, the axes end points), that a topological figure is a far better heuristic device than would be a field with intersections.

I 372), transportative or transformative (Schechner, BTA 126), and an “activating force or energy” (Drewal and Drewal 102 qtd. in; Zarrilli, DPS II 494). It is a “liminal space” (Schechner, PS 24), in-“between modalities” (Kirshenblatt-Gimblett 1 qtd. in; Schechner, PS 3), that is not “reducible to terms independent of its formation” (Kapferer 7 qtd. in; Zarrilli, DPS II 495).⁵³

In her chapter “In Excess of the Already Constituted: Interaction as Performance,” Nicole Ridgway builds on these anthropological foundations, but uses the “philosophical tradition[s] of... relation and emergence” to bring new light to performance (In Excess). Her performance becomes a figure of thought that attempts to encompass emergence not “in’ the between” of two pre-existing entities (as Schechner and others suggest), “but rather, ‘of the relation” of the two together. (Ridgway, In Excess). This section builds on Ridgway’s understandings of performance, emergence and relationality, and applies them to the body and how it is engaged and amplified through interactive art.

Both inside and outside of performance studies, there is currently an interesting convergence around the concept of emergence in contemporary thought. The scientific field of emergence, for example, is related to theories of complexity, where a great number of individual entities that follow “a few simple rules of interaction” will behave collectively, “self-organizing” into an “emergent intelligence” (Johnson 33 and 41).⁵⁴ Like the topological Möbius strip, the relationship between the system’s basic components generates a surplus effect: the sum is greater than its parts. Whereas “distributed cognition replaces autonomous will” in the various scientific disciplines dealing with

⁵³ Alongside the use of the word performance in relation to digital technologies, it is worth at least mentioning Brenda Laurel’s book from the early 90s, *Computers as Theatre*, if only to highlight how disparate our research parameters are. Laurel relates interface design to producing a play in a theatre – theatre in a rather narrow sense, not performance as it is more broadly figured here – and proposes the use of different / better, performance-based metaphors for every day computing (i.e. in lieu of the desktop). She is distinctly interested in the field of Human Computer Interaction, and although it is an interesting thesis, it has little to do with fine art or, for that matter, cultural studies. She very briefly does, similar to artist Myron Krueger (*Artificial Reality II*), say programmers should place more emphasis on action and performativity when implementing our computer systems, but then continues to relate this only to the user interface in systems design, not art.

⁵⁴ Emergent complexity explains how ant colonies (long mistakenly thought to have central decision-makers, or pacemakers) can perform mathematical formulas to figure out precisely where are the most efficient places for garbage dumps, their dead, or the queen in relation to the colony (tested in nature as well as captivity), and reveals how and why cityscapes form, merge and change due to human behaviour and external forces. Emergence theory has been used to develop genetic algorithms that adapt software to new operating systems, create intelligent voice and character recognition programs using a large number of small, parallel programs instead of one massive decision tree, and recommend music and books to Amazon-shoppers worldwide. For a fascinating pop science history and explanation of the field of emergence, see Steven Johnson’s *Emergence: The Connected Lives of Ants, Brains, Cities and Software*.

complexity, “emergence replaces teleology” in the humanities-based fields of philosophy and cultural studies that Ridgway et al are speaking to (Hayles, *Posthuman* 288). In both science and the arts – where we now see that much of the ‘work’ in complex systems happens from the bottom-up, rather than top-down – emergence theory highlights the enormous potential of interactive (and performed) relationships.

Brian Massumi, for example, avers that emergence “cannot be understood as a shape or structure. It is more a bundle of potential functions localized... separated from each other by dynamic thresholds rather than by boundaries” (Massumi 34).⁵⁵ He eloquently ties emergence to movement, claiming that this turns contemporary theory “on its head” (Massumi 7). Unlike in the Zeno paradox, where position and stasis come first, “with movement a problematic second,” here position is secondary to movement; it is “movement residue” (Massumi 7). In this shift, Massumi argues, the problem for theory is no longer one in which we try to explain how change occurs in relation to an extant position, but “to explain the wonder that there can be stasis given the primacy of process” (7).

For Massumi, movement ‘is,’ and positionality is always already an ‘emergent quality’ of that movement. Movement and position are not, thus, binary opposites, and emergence is not merely the passage between them. Rather, Massumi seeks to show that movement and position pass into one another: they form a dynamic unity. To embody this dynamis, this complex passing into, emergence needs to be conceptualized processually, and ‘process concepts,’ Massumi asserts, cannot be understood as ontological. They must be ‘ontogenetic.’ A process concept must be drawn out, is itself “equal to emergence” (Massumi 8). In other words, the concept of emergence must be understood as emergent itself, as full of unfolding potential. When applied to the body, this means our conception of the body (the body-image) emerges from an emergent embodiment (the body-schema), which itself emerges from the space of its potential.

If our approach to bodiliness is to map (following Zeno’s arrow) infinite possible points of stasis, then we are always looking back, after the event of embodiment (the flight of the arrow), and merely seeing it as in one position, as one never-changing, and immobile, ‘thing’ (a la Strathern). If we, rather, follow the movement/positionality dynamic,

⁵⁵ Massumi is summarizing some of the work of (the unfortunately, mostly untranslated) French philosopher Gilbert Simondon, also referenced by Hansen in the last section. The two chapters of Simondon’s that have been translated thus far are “The Genesis of the Individual” and “Technical Individualization.”

then we are in the realm of potential. "Possibility is backformed from potential's unfolding. But once it is formed, it also effectively feeds in. Fed back, it pre-scripts" (Massumi 8). Possibility allows for variation, but only in what a thing already is, whereas potential "is unpre-scripted. It only feeds forward" (Massumi 8). Potential is "the immanence of a thing to its still indeterminate variation, under way" (Massumi 8).

Ridgway's aforementioned study of digital art inter-actions draws on Gilles Deleuze to name the figure of performance as a way to think through the movement and potential of emergence. She juxtaposes the Deleuzian notion of *preformism* - "the already preformed" (Grosz, *Thinking* 25 qtd. in Ridgway), the "*completely given*" (Deleuze, *Bergsonism* 98 qtd. in Ridgway), "rather than produced" (Grosz, *Thinking* 25 qtd. in Ridgway) - with *performance* - "a taking place, something in process and, by definition, unfinished" (Ridgway, *In Excess*). Performance, she says, "inaugurates not enacts.... Interaction is not a meeting of two extant essences, but a movement and unfolding of the [relation] that is always supplementary and incomplete" (Ridgway, *In Excess*). Here the topological, emergent, potentialized, relational and interactive are encapsulated in one word: performed.

This figure of performance - used for understanding interaction in Ridgway's paper and embodiment in this dissertation - is not the same as that put forward by cultural theorists in the early nineties. The latter refers to the enactment of identity, and is derived from ideas laid out by Erving Goffman, in his classic *The Presentation of Self in Everyday Life*, as well as J.L. Austin's understanding of the 'performative' (Do Things with Words), utterances that make an ontological change (easily recognizable examples being weddings or declarations of war).⁵⁶ Judith Butler, who was mentioned earlier in this chapter in relation to the body-image, provides an interesting example of this when she suggests that gender is performed. We maintain, she says, a "tacit collective agreement to perform, produce, and sustain discrete and polar genders as cultural fictions" (Butler, *Gender Trouble* 140).⁵⁷

The theories surrounding socially constructed identities, and how they adhere to certain bodies, saw a very productive moment in cultural studies. Interrogating the feedback loops between one's own body-image construction and the "cultural fictions" of

⁵⁶ Austin will be briefly re-visited in Section 7.4.

⁵⁷ Butler lays out very complex and thoughtful arguments with regards to performed bodies and gender, in *Gender Trouble*. She herself later problematizes this figure of performance in relation to the material body, in her *Bodies That Matter: On the Discursive Limits of "Sex"*.

identity lead to many breakthroughs in the liberal arts, as well as fine arts – some of the latter of which will be discussed later in this chapter. The figure of performance this dissertation puts forward, however, does not sit *between*, for example, me and my desire to be something or someone (per Goffman); it is not a means to an end (even if that end is an unreachable fantasy, as Butler avers); and perhaps most importantly, it is not based on the inscribing practices we perform in order to construct identity.⁵⁸ Here performance is a “process concept” that addresses emergence and relation; the conception of the performed body acknowledges the material body, but understands this materiality – along with the incorporeal dimension of the body, its inter-activities – as “potential.” This figure of performance as applied to the body does not attest to the performative construction of self, but the performed emergence of embodiment.⁵⁹

The body, this dissertation argues, is a performed and emerging emergence. It is a process concept that, as the body-schema suggests, is co-constituted in and through and with its meeting with the outside. The performance of embodiment *is* potential; it *is* relationality. And this understanding of the per-formed body foreshadows and amplifies what is at stake in interactive artistic encounters: an intervention in movement – in the emergence, potential and relationality of the body.

3.4 Art Interventions: from the Explicit to the Implicit (bodies in quotes)

In the foreword to Richard Schechner’s book, *Between Theatre and Anthropology*, anthropologist Victor Turner asserts that performance studies practitioners such as Schechner are less “concerned with *stasis* than with *dynamis*,” and are, as such, “committed... to interference” (XI-XII). This dissertation, too, is concerned with practitioners who disrupt and provoke. Like Katherine Hayles, I “view the present moment as a critical juncture when interventions might be made...into prevailing concepts of subjectivity” (Hayles, *Posthuman* 5) and, more importantly to this thesis, embodiment.

⁵⁸ See Section 3.4 for more on inscription and incorporation.

⁵⁹ A study of gender, race, or other identity-based classifications through the lens of the per-formed body presented in this dissertation – one which is, among other things, material, but careful not to fall into an essentialist or naturalist reading – is beyond the scope of this text. Such a study is taken on in part, however, in Lanei Rodemeyer’s forthcoming book on Lou Sullivan and transsexuality. No reference is yet available for this book, but its premise was outlined in Rodemeyer’s presented paper, “From the Diaries of Lou Sullivan: Intersubjective Discourse and the Intersection of Embodiment” at the Intercorporeality and Intersubjectivity conference at University College Dublin, June 6th and 7th 2008, Dublin, Ireland.

Hayles' use of the word "intervention" here is a purposeful allusion to contemporary art practices.⁶⁰ The term 'art intervention' obviously alludes to some sort of subversion from within a dominant paradigm, and the works that fit into its field tend to involve references to and engagements with previously existing artworks, audiences or venues/spaces. The infamous graffiti artist, Banksy, for example, is disruptive and anonymous with his interventions;⁶¹ his art ranges from illicitly hanging his own work alongside 'the greats' in museums, to printing his own money and putting it into UK circulation, or designing ironic children's story books for religious extremists. Each uses context and media to speak back to power by provoking laughter, discomfort and/or thoughtfulness. The accent and interrogation of cultural norms and accepted hierarchical structures present in such pieces is itself an artful and productive mode of inquiry and practice.

Interventionist art, especially with regards to the body, owes a great deal to the performance art of the last three decades, in particular the work by women artists known as 'explicit body' performance. The "explicit body" is a term coined by Rebecca Schneider to describe performance art that speaks to the body as a "mass of orifices and appendages, details and tactile surfaces ... [that] in representation is foremost a site of social markings, physical parts and gestural signatures of gender, race, class, age, sexuality - all of which bear ghosts of historical meaning, markings delineating social hierarchies of privilege and deprivilege" (2).

The body made explicit in performance, argues Schneider, "explicate[s] bodies in social relation" (Schneider 2). The explicit body (named in reference to the Latin root *explicare*, to unfold) uses an "explosive literality" in order to unfold and "peel back layers of signification" (Schneider 2). This explicit unfolding exposes "not an originary, true, or redemptive body, but the sedimented layers of signification themselves" (Schneider 2). The explicit body in performance is a body which is scarred by a history larger than the

⁶⁰ Although 'interventionist art' as a term has been around and in use since the late sixties (perhaps earlier), and was more common by the mid-nineties, it was mostly popularized for the mainstream through a 2004 exhibition and catalogue (at the Massachusetts Museum of Contemporary Art and published by MIT Press), *The Interventionists: Users' Manual for the Creative Disruption of Everyday Life*. By 2006, it had become a frequent term in widely read art magazines and historical art institutions alike.

⁶¹ Banksy's 'real,' given name was actually discovered, and revealed to the public against his wishes, while this dissertation was being written. This (not widely circulated) fact has had little effect on Banksy's practice, given that his 'other identity' is a relative unknown in art circles. See Gavin.

bodies' wearer - we are peeling away to reveal what is already there, but unbeknownst to us.

Schneider's explicit body in performance "renders the symbolic [as] literal" in order to "pose a threat... [to] implicit structures of comprehensibility" (1-3). Explicit body performance deploys the material body to collide the literal against the symbolic order of meaning in order to implode the binary logics of capitalism and patriarchy, and to reveal, to paraphrase Judith Butler, which bodies come to matter and why.⁶² What follows are brief descriptions of three feminist performance art works from a very large field, chosen because of how they exemplify Schneider's thesis, as well as stress a common focus on language, identity and power.



Figure 11, Valie Export's Action Pants: Genital Panic

In the work of performance and visual artist Karen Finley, for example, the explicit body intervenes in the spectacle of engenderment. In one piece, she challenges Freud's theory of penis envy (that women have children as a replacement for the phallus) by literally 'strapping on,' and wielding, an infant across the stage. According to Jill Dolan's reading of her performances, Finley does not offer herself as an object of desire but rather desecrates herself as an object of male desire, as commodity to be consumed (Bending Gender). Confounding the expectations of conventional theatrical spectatorship, Finley de-idealizes and de-sacralizes the body and draws attention to

⁶² In thinking through the a priori and Nietzsche in her second book, Butler asks which bodies come to matter and why (Bodies That Matter). She reminds us of the importance of power (regulatory norms and matrices of intelligibility) and that materialization takes place: it is a series of practices that produces, over time, the effects of insides and outsides (boundaries, surfaces and depths). In her analyses, she provides a very cogent and provocative critique of constructionism – including as it is read in her first book (Butler, Gender Trouble) – and its instantiation of an a priori body: the tabula rasa body biological material that is inscribed by the social, cultural, political etc. See Section 3.3 for a bit more on Butler's work.

female bodies as sites of prohibition.⁶³ By taking the signifier for the body, the performances reveal the markings of embodiment and draw us to the place where meaning collapses.⁶⁴ Here the explicit body literalizes the legislative frontier, that aspect of power, which both authorizes and invalidates representations, and gestures to that which is un-representable.

The confrontational use of the literal body to draw attention to its representational inscription can also be seen in the work of artist Valie Export, for example her piece *Action Pants: Genital Panic* (see Figure 11, page 59). In this 1968 piece, Export offers the film-making / viewing public at an art cinema in Munich an up close view of herself wearing pants with the crotch cut out. Moving from row to row, Export's actual genitals confront the fetishized representational genitals of pornography. Here she "repudiate[s] the representational static sign" of the female body in film, and instead stages an "interventionist act" (Stiles). This performance literalizes the reduction of women to their sex, and makes explicit the relationships between spectacle, body, visual image, and objectifier / viewer.

And as a final example, one that Schneider herself often points to, the Guerrilla Girls (GG, see Figure 12, page 61) began asking questions about women and people of colour in the art world – their lack of power and recognition – in the early 1980s. They found their initial protests lacking progress, and so began (and continue) to play out a visual pun on 'guerrilla warfare' in order to get the attention of the media: GG wear ape-like suits, and hang or carry provocative political signs, which might ask questions like, "Do women have to be naked to get into the Met. Museum?" (Metropolitan Museum of Art), and highlight statistics that show that the vast majority of artists in the Met are white males, while almost all the nudes are female. Calling themselves the "conscience of the art world," they remain anonymous to this day, and have gained international recognition as the "masked avengers," who fight against discrimination through posters, talks, publications and films that expose "sexism, racism and corruption in politics, art, film and pop culture... with facts, humor and outrageous visuals" (Guerrilla Girls). According to Schneider, the Guerrilla Girls "make explicit a social contract which has historically marked women and people of color as less evolved, more 'primitive,' than the implicitly higher primate," the white male (1).

⁶³ See "Staging the Obscene Body" (Fuchs).

⁶⁴ See "Mimesis, Mimicry, and the True Real" (Diamond) and "The Shudder of Catharsis in 20th Century Performance" (Diamond).

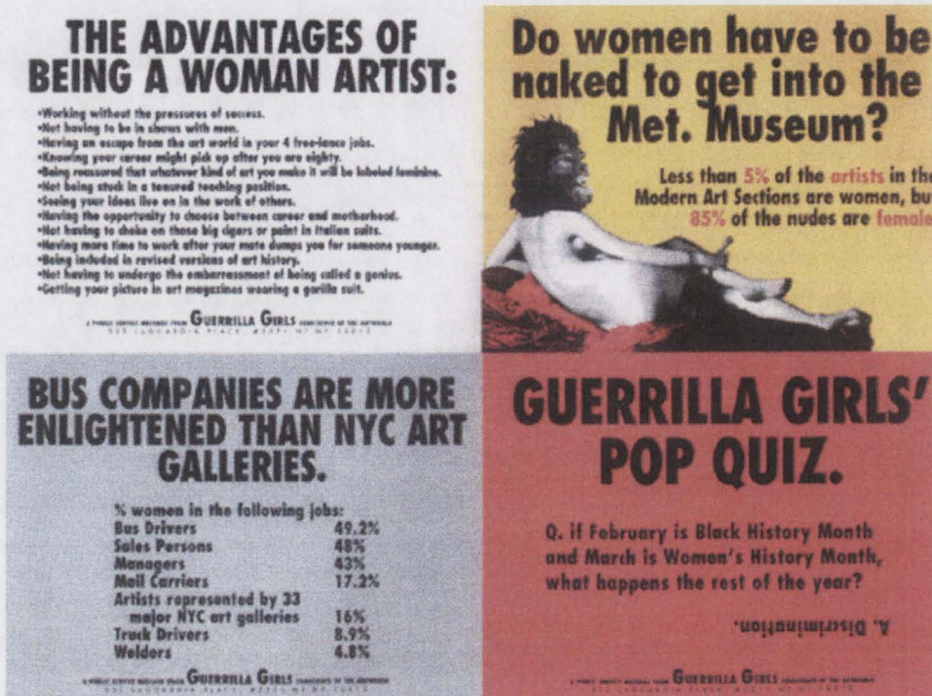


Figure 12, the Guerrilla Girls signage

As evidenced here, Guerrilla, within the framework of the performance art, body art and Happenings movements that Schneider writes about, the notion of the explicit body is extremely productive. It 'unfolds' and reveals to us our stories, preconceptions and, perhaps most importantly to Schneider, social relations. This kind of art draws attention to the dominant structures of representation and meaning-making, and works to reveal the body as a site of inscription, surveillance and power. It asks the spectator to grapple with the body's explication in discourse and in art practices (for example, in primitivism), and attempts to make visible the relations of seeing – who sees and who is seen – embedded in these discourses and practices.

Ursula Frohne and Christian Katti assert, "Historically, 'body' and 'language' gained new significance with the emergence of action, performance, and concept art. Retrospectively, they may be considered preliminary impulses for the introduction of 'new media'" (9). But, they continue, we need "to develop a critical concept of media that neither presupposes nor excludes the categories of body and language ... to address the political implications for changing notions of the body and language under the impact of electronic space and communication" (Frohne and Katti 9). This dissertation takes up Frohne and Katti's challenge to develop an approach to new media art that does not exclude or presuppose the body. It aims to develop a critical framework for digital works

that disrupt not only inherited structures of representation, but also the embodied and interactive relationships between subject and object.

Following performance art and under the conditions of digitality, there's potential for an/other shift in subject/object and performer/audience hierarchies, and thus a shift in how we might read explicit inscriptions and/or come to perceive (or enact) our embodiment. The 'flesh' can perhaps be thought of as more of a palimpsest, where we inscribe and scratch away, and *enfold*, alongside our continuous unfolding, in order to not uncover or discover our bodies, but to emerge as bodies (both legible and illegible), as not-yet-bodies, as bodies in process - implied bodies, in relation and drawn out. Where the root of explicit is *to unfold*, to imply is *to enfold*, and the relationship between the two is neither dichotomous nor dialectical. Inside becomes outside becomes inside, implication feeds into explication and vice-versa, in a continuous and transformational performance akin to the topological Möbius strip. This continuum is not a binary between emergence and positioning, between regulatory operations and becomings, or even between implicit and explicit. It is rather a both/and, a co-telling – in, of and by the flesh.

Here is where an understanding of the body-image and body-schema prove to be most useful. They can be paralleled to Hayles' distinction between inscription and incorporation, which in turn illuminates how artworks might intervene in the explicit or implicit modes of embodiment. It is beneficial to cite her text extensively:

inscription is normalized and abstract, in the sense that it is usually considered as a system of signs operating independently of any particular manifestation.... In contrast to inscription, which can be transported from context to context once it has been performed, incorporation can never be cut entirely free from its context....

An incorporating practice such as a good-bye wave cannot be separated from its embodied medium, for it exists as such only when it is instantiated in a particular hand making a particular kind of gesture. It is possible, of course, to abstract a sign from embodied gesture by representing it in a different medium, for example by drawing on a page the outline of a stylized hand with wavy lines indicating motion. In this case, however, the gesture is no longer an incorporating practice. Rather, it has been transformed precisely into an inscription that functions as if it were independent of any particular instantiation.... Showing someone how to stand is easy, but describing in words all the

nuances of the desired posture is difficult. Incorporating practices perform the bodily content; inscribing practices... modulate the performance. Thus incorporating and inscribing practices work together to create cultural constructs. (Hayles, Posthuman 196-201)

So where the body-image and schema might co-produce our experience of embodiment, and inscribing and incorporating practices describe the signs and performances that feed into them, explicit and implicit body art works disrupt and intervene into these practices, respectively. Explicit body art 'unpatterns' habitual understandings, calling attention to the contradictions in commonly accepted power structures; implicit body art 'unpatterns' habitual actions, accenting movement and transformation through relational mobility.⁶⁵

Referring back to Zeno's arrows, and the post-event, 3D, mapped-out structures that make up Massumi's contemporary Subject, artists like Finley use the explicit body to put a given and signified "possibility" – the arrow's stop-points – in quotes. Explicit body art can performatively literalize, ironize and call into question the sacred classifications of, for example, "race," "gender," "woman," "child," or "phallus," depending on the *explication*. Actually, to borrow a phrase from Walter Benjamin, they are "quoting without quotation marks."⁶⁶ According to Andrew Benjamin's reading of Walter Benjamin's notes on quotations:

In its most general sense, to quote means to restate what has already been stated. Any citation, therefore, must also re-site [with an "s"]... what could be described as a re-situation.... What is given is given again. This re-giving is neither a simple iteration nor a repetition of the Same.... The re-giving therefore needs to be thought of as an iterative reworking.... The process of reworking re-presents the given in such a way that other possibilities ... already inscribed within [what is given are]... able to be revealed....

The absence and presence of quotation marks... indicates the presence of different moments of historical time – chronological time ... The absence of quotation marks signals the disruption of context. (A. Benjamin 50-53)

⁶⁵ 'Unpatterning habit' is a phrase borrowed from contemporary dance practitioners.

⁶⁶ This phrase comes from Walter Benjamin's unpublished notes, some of which are translated and cited in *Present Hope: Philosophy, Architecture, Judaism* (A. Benjamin 48)

A quotation without quotation marks re-cites and re-situates, challenges and intervenes in, that which is (not) in quotes.

Explicit bodies in performance, this section argues, put Zeno's stop-points in crisis through the tactic of quoting without quotation marks. They re-cite and re-situate our structured inscriptions and static identities, asking us to look at what is both inside and outside of the quote, its history or continuity as well as its disruption, all the while bringing "ontological and temporal considerations to bear" (A. Benjamin 53). Finley and Export and the Guerrilla Girls interrogate their respective subject matters with the spectacle of missing quotation marks around their body-images. Here I argue that where explicit body quotations surround Zeno's positions and put them in crisis, implicit body quotations do the same to the movements between the stops, to the body-schema. Interactive art intervenes in the "potential" that is the body before it is reduced to what is "possible." It interrogates the body's passage and emergence, challenges that which occurs in its performance. Interactive art puts the body-schema, the body's continuous relationality, in (absent) quotes.⁶⁷

The implicit body, like passage, precedes construction. And interactive body art invites us into the explicit experience from which an implicit embodiment emerges. The work that this dissertation addresses does not focus on our social inscriptions (although these should never be overlooked), but instead attempts to create physical tensions in our contextual incorporations, dispersing, interfering with, and intervening in, our 'continuity.' It re-cites the potential of our body-world couplings at large, and can more fundamentally incorporate and/or re-situate, our ongoing relations to that with which we interact, depending on the *implication*.⁶⁸ To imply in Latin is not only to infold, but also to involve and entwine, and in this case, to inter-act, re-work or per-form.

⁶⁷ Quoting without quotation marks as a frame for interactive art is put forward here with an understanding that quotation marks are themselves signs, and thus inscriptions. This is a gesture towards reconciling the feedback loop between the incorporations we perform through our interactivities, and the critical distance we must apply in order to utilize the implicit body approach and framework.

⁶⁸ This is not the first time the word 'implication' has been used to refer to infolding potential. Philosopher Gilbert Simondon's work on emergence briefly labels "implicit form [to be] a bundling of potential functions, an infolding or contraction of potential interactions" (qtd. in Massumi 34-35). And quantum physicist David Bohm also puts forward an "implicate order," which assures us that "'objective indeterminacy' happens on all levels" (Bohm; Massumi 37); Bohm's challenges to prevailing views in his field – mostly involving the in- and unfoldings of quanta – have made lasting contributions to our understandings of theoretical physics, philosophy, neuropsychology, holographic imaging, consciousness and matter, just to name a few disciplines. These examples, like those of emergence and embodiment texts, show a contemporary convergence around the

3.5 The Art Event: situation and performance

Interactive art, with its potential to intervene in process rather than construction, may allow, as Margaret Morse argues, the visitor to perform the piece: she “*is the piece as its experiential subject, not by identification, but in body*” (155).⁶⁹ Interactive art is, at its best, “unfinished” work that requires a “co-joining” of piece and participant (Eno and Kevin; Morse, *Virtualities* 16). The ‘viewer,’ in other words and to revisit Ken Feingold, is central to the final materialization of the work (and the work, as argued by Hansen et al, is central to the materialization of the participant). While all art is to a lesser or greater extent ‘interactive’ through how we engage with it, physically interactive work requires more than the work of the imagination because it is, as Pierre Levy states, created by the body (366) and, in part, experienced as a kind of learning “with the body itself” (Morse, *Virtualities* 34).⁷⁰ The computer and art installation both catalyze and put quotes around our bodily interactions.

It is important to bear in mind, however, Dag Petersson’s caveat: a caution against regarding computers as prostheses, as mere extensions of, or tools used by, the body. This, he says, would place computing and interaction under the dominance of reflection. Speaking of the work of the artist Fabian Marcaccio,⁷¹ he argues that “knowledge does not form materiality; knowledge is formed by materiality” (Petersson). The body of movement in interactive art “has a capacity for conceptualization that is not opposed to the materiality of the conceptualized” (Petersson). Here materiality is a “constellation” of

concept of ‘the implicit’ as important in both scientific and humanities-based disciplines. For this dissertation, the ‘implicit’ descriptor is used against a larger ‘implicit’ backdrop in order to put forward its embodied and entwined approach to interactive art encounters.

⁶⁹ With regards to the contemporary use of the term “interactive,” it is interesting to note, with Ann-Sargent Wooster, that “It was less than thirty years ago when the term interactive was first used in reference to computers, and it was used to describe the then breathtaking but now humble function of being able to interrupt a computer run.... Computers have gone from the most basic form of interactivity, INTERRUPTION to SELECTION ... to the highest form of interactivity, RESPONSIVENESS” (288-290, her emphasis).

⁷⁰ Along with these strengths, interactive computing has many downsides, a study of which is beyond the scope of this dissertation. Lev Manovich, for example, articulates in a chapter entitled “The Myth of Interactivity” that ‘interaction’ (on, for example, the World Wide Web) at worst becomes a glorified delivery system for commodities, and at best can perhaps allow us to be swept away by someone else’s vision (LNM, 2001). Alongside several criticisms of interactive design, Manovich warns that too much facile interactivity inculcates a mistaken sense in the user that the world is fragmented, conditional and subject to their control. Baudrillard too rings bells of warning with regards to the increase use of interactivity: “we are threatened on all sides by interactivity.... distance is everywhere abolished” and so-called “tactile interactivity” in which we “become actors” provides a closed feedback loop that destroys agency and “strangeness” (7, 15). This dissertation aims to embrace the productive possibilities in interactive installation.

⁷¹ See <http://www.paintants.com/>

parts that “conditions knowledge,” and instead of the “traditional hierarchical order” of the metaphysical opposition in which reflection trumps action (body and movement), this knowledge has a “particular capacity to understand and conceptualize the materiality that conditions it. It is not expressible as reflection, but as composition” (Petersson).

Nicole Ridgway avows that while “new media has, for the most part, displayed a tendency to take interaction literally as ‘doing’ something, this approach argues that as a combination of attention and distraction, intention and passivity - woven through with the reciprocities of sensation, affectivity and conscious reflection” - interaction is incipient formation (Ridgway, *In Excess*). It is, Petersson would agree, active composition and not merely reflection. Inter-action, Ridgway asserts,

is not only a doing and a making, but also a receiving and enduring. It speaks to not only the ability to effect, but the ability to be affected. As a site of emergence – like Adorno’s configurations – inter-action may unfold the space between subjects and objects such that subjects and objects are implicated in the space of unfolding. Here interaction encompasses a taking place that inaugurates rather than enacts an *a priori* script. (*In Excess*)⁷²

Per-formed through its inter-activities, an implicit body emerges alongside a continuous and unfinished art work.

In his own defence of interactive art, Mark B.N. Hansen beautifully captures the power of corporeal interventions when translating and paraphrasing French philosopher Alain Milon’s *La Réalité Virtuelle: Avec ou sans le Corps?* The body in interactive art, he argues, “furnishes the opportunity to pose the question of the person and its status,” of the participant as subject and the art work as object, and also the “proper limit” – the boundaries – between the two. Here the body “forms an ‘obstacle and a resistance to all forms of transparency’ and is living only ‘when it is opaque, complex, confused, flexible and in perpetual mutation’ in relation to the outside (Hansen, *Bodies* 14). Art that engages the implicit body intervenes in this mutation, this ongoing transformation, of the “living” body. It stages a performance of “body” and “art” that is, this section argues, less a viewer

⁷² Ridgway notes one should “see, for example, Helmling, Steven, “Constellation and Critique: Adorno’s Constellation, Benjamin’s Dialectical Image,” *Postmodern Culture* (14:1), <<http://www.aith.virginia.edu/pmc>>, 2003 (February 4, 2004), and Lawlor, Leonard, *Imagination and Chance: The Difference Between the Thought of Ricoeur and Derrida*, (New York: State University of New York Press, 1992).”

alongside an art object, and more an event that proceeds in and of the co-constitutional relation of the two.

A footnote in Massumi's *Parables* refers to the potential of "art as event rather than enduring object" (277). Massumi says that "nothing is prefigured" in the "ungraspable event" (26, 57). The event is "composed of two interacting subsystems" that "resonate together" and follow "entirely different rules of formation" (Massumi 26). An event is a "substanceless and durationless moment... whose reality is that of potential – pure relationality, the interval of change, the in-itself of transformation" (Massumi 58). In "art as event," this section avers, the subject (viewer) and object (art object) are composed of their interrelations. Massumi also asserts that the "good graces of a rig" – in his case study, the rig of a film set – can make "a technology of the event" through "strategies of performance" (55, 63, 277).⁷³ In other words, the "rig" of a set, stage or art installation produces an event-space, invites a per-form-ance of subject and object which is ripe with potential and transformation. Such event-spaces, I am arguing, are what Massumi calls situations: spaces "grasped from the point of view of the eventful washing-through it of an ongoing movement of transformation" (Massumi 265). A situation refers to the "potentialization of a context" (Massumi 265), circumstances that frame the setting for an "event." Here, this section argues, the "technological rig" of interactive art deploys the implicit body, creates unique situations (in quotes) that enact and intervene in the event / co-emergence of body and art/world.

Katherine Hayles' paper on interactive art also asserts that technology has the power to provoke embodied transformation. She contends there is "a deep and dynamic connection between the evolutionary pathways of computers and humans, each influencing and helping to configure the other" (Hayles, *Flesh and Metal* 304). Hayles says that digital "art not only teaches us to understand our experiences in new ways but actually changes experience itself.... [Interactive] artworks engage us in ways that make vividly real the emergence of ideas of the body and experiences of embodiment from our interactions with increasingly information-rich environments" (Hayles, *Flesh and Metal* 304).

⁷³ In Massumi's original example, it is a "technology of the event that is also a technology of the self and a technologizing of the self" (63). Believe it or not, this sequence of poetic, critical proclamations comes out in an ironic but thoughtful study of one of Ronald's Reagan's early performances for a film, where the 'rig' Massumi refers to is on a Hollywood movie set.

And Hansen's book, *Bodies in Code*,⁷⁴ claims outright that the "technically triggered experience" in interactive art can "stage... the excess of the body schema over the body image to increase [the participant's] agency as an embodied being" (19-20). He looks at the 'mixed reality' movement within interactive art to argue that inviting action and enactment, rather than producing illusion and simulacrum, creates more immersive spaces. Here Hansen does not mean immersive in Oliver Grau's sense of the word,⁷⁵ but in the sense that interactive art intensifies the experience of bodiliness through its engagement with embodiment as inherently interactive and emergent.⁷⁶ Interactive artists, he maintains, are "exploiting the margin of indetermination" in the process of embodiment (Hansen, *Bodies* 30).

This dissertation argues that interactive art not only engages a performed embodiment, but intervenes in its implicit and indeterminate processes. The implicit body in interactive art situations, staged via technologized events, is complexified, confused and interfered with. Put simply: interactive art asks us to move in ways we normally wouldn't, and by changing our action and experience, both amplifies and transforms the relation from which the body and art/world emerge. According to VR-guru Char Davies, interactive art works "temporarily deautomate habitual perception and facilitate a 'seeing freshly.'"⁷⁷ Says internationally acclaimed interactive artist Rafael Lozano-Hemmer, "the real motivation... is the modification of existing behavior... [to] create a situation where... the participants relate in new, 'alien' ways" (Rhizome). By setting the stage, interactive artists-as-directors create productive tensions between the per-formed and the pre-formed, shifting our experiences of "body".⁷⁸

3.6 A Relational Approach

At this point, it must be noted that curator and art theorist Nicolas Bourriaud has indeed already put forward, in the mid- to late-90s, a "thematic framework" for understanding participatory, relational and interventionist art and installation (Bourriaud, *Postproduction* 7). This section is a close reading of Bourriaud's *Relational Aesthetics* (and other subsequent, related texts), and shows where the implicit body approach – and the art works it is intended for – differs from his own; it also addresses and unpacks the

⁷⁴ Hansen defines the body in code as "the technical mediation of the body schema" (*Bodies* 19).

⁷⁵ See Section 2.3.

⁷⁶ See "Preface" and "Introduction" to Hansen's *Bodies in Code*.

⁷⁷ Char Davies quoted in an email to Mark B.N. Hansen (*Bodies* 111).

⁷⁸ Here, I ironically put the word body to its everyday use.

finer points we can learn from Bourriaud's thesis that may be applied to critical understandings of interactive art and embodiment.

In his highly influential treatise on contemporary installation, what he called "relational aesthetics," Nicolas Bourriaud asserts that the "aura of art no longer lies in the hinter-world represented by the work, nor in form itself, but in front of it, within the temporary collective form that it produces by being put on show" (Relational 61). For Bourriaud, the "exhibition is the special place where such momentary [social] groupings occur," and we need "aesthetic criteria" to analyse and judge "the coherence of [this art's] form, and... the image of human relations reflected by it" (Relational 17-18). Here, art is "an activity consisting in producing relationships with the world with the help of signs, forms, actions and objects" and it is critiqued by asking questions pertaining to what Bourriaud calls the co-existence criterion: "Does this work permit me to enter into dialogue? Could I exist, and how, in the space it defines?" (Relational 107, 109).

What Bourriaud defines as relational art works take the forms of "invitations, casting sessions, meetings, convivial and user-friendly areas, appointments, etc... vehicles through which particular lines of thought and personal relationships with the world are developed" (Relational 46). They are public "encounters, events... collaboration[s] between people... with something other than a simple aesthetic consumption in mind" (Bourriaud, Relational 28-29). These works deal, he says, "with the interhuman sphere: relationships between people, communities, individuals, groups, social networks, interactivity, and so on" (Bourriaud, Postproduction 7).

Bourriaud began writing *Relational Aesthetics* in 1995, as a "critical distancing" from the "early role he had played as curator" for many of the artists whose work he exhibits and writes about (Gillick 96),⁷⁹ as well as a distancing from the "predetermined grids of reading" (Bourriaud, Postproduction 8) for such art: "Happenings, Fluxus instructions, 1970s performance art," Situationism and the avant-garde (Bishop, Antagonism 61-62). While he would agree that his relational artists' practices are rooted in such historical movements, that at first glance they might seem to be "nothing new" by comparison, in the work of these practitioners, "notions of interactivity, environment, and 'participation' – classic art historical notions – were being rethought through and

⁷⁹ Most notably, an exhibition called *Traffic* at the Le CAPC Musée d'Art Contemporain de Bordeaux (1996). Artists discussed at length in the book, first published in 1998, include Pierre Huyghe, Maurizio Cattelan, Gabriel Orozco, Dominique Gonzalez-Foerster, Rirkrit Tiravanija, Vanessa Beecroft, Felix Gonzalez-Torres and Liam Gillick, among others.

through... according to a radically different point of view.” The difference, Bourriaud asserts, “resides in the articulation” (Postproduction 8-9).

Bourriaud helped launch the career, for example, of Thai-born and New York-based Rirkrit Tiravanija.⁸⁰ Tiravanija is probably best known for his work from the mid 90s, “installation-events where he offers free meals to grateful – and sometimes baffled – gallery-goers” encouraging his “participants to explore concepts of ownership, sharing and hospitality” (Saltz). Here, the artist would set up a dining table and working kitchen, and cook lunches and dinners for both invited and walk-in guests during gallery hours. He would carry on conversations with the participants, ask and encourage them to interact socially with one another, thus provoking and creating the relationships that shape the work itself, over time. Tiravanija’s other work includes setting up reconstructions of his own apartment in the gallery space, and organizing reading libraries in museums, towards the same end of social interaction. His work, argues Bourriaud, breaks “with the manipulation of references and citation” most common in performance art, Fluxus, etc, and instead works to “deeply reexamine notions of creation, authorship, and originality through a problematics of the use of cultural artifacts” (Postproduction 8-9).

At stake in work such as Tiravanija’s, is to “articulate uses, to place forms in relation to each other,” as well as people in relation to one another (Bourriaud, Postproduction 43). Rather than attempt to change the world “based on a preconceived idea of historical evolution” (as with the aforementioned art movements), these artists ask us, Bourriaud argues, “*to inhabit the world in a better way*” (Relational 18). He avers, this

generation of artists considers inter-subjectivity and interaction neither as fashionable theoretical gadgets, nor as additives (alibis) of a traditional artistic practice. It takes them as a point of departure and as an outcome, in brief, as the main informers of their activity. (Bourriaud, Relational 44)

Relational artists are not looking towards creating an impossible “radical and universalist utopia” in the long-term – which was, for example, a stated goal for the Situationists – but are instead making temporary “micro-utopias, the interstices opened up in the social corpus” (Bourriaud, Relational 70). A relational aesthetic framework thus seeks to explore “the invention of relations between consciousness” and “the social setting for the

⁸⁰ Pronounced “RICK-rit Tira-VAN-it”.

reception of art” (Bourriaud, Relational 22). Relational artists set up inter-personal relations in order to invite investigations, and thus better understandings, of social relationships.

As art critic and theorist Claire Bishop notes in the introduction to *Participation* – her edited collection that aims to show the trajectory leading up to and beyond relational aesthetics – however, the “point of departure” for relational aesthetics and its historical antecedents “is the *social* dimension of participation” (10). This is opposed to the participatory activities found in what Bishop disdainfully refers to as “so-called ‘interactive art,’” in which it is the individual embodied viewer that is activated (Viewers 10). Bishop quickly dismisses inter-active art such as that discussed in this dissertation, arguing against “the opposition of ‘active’ and ‘passive’” viewers – and thus nullifying the potential difference in understanding bodily activity in the gallery space – as well as stating that the “trajectory” of interactive art has been “rehearsed elsewhere” (Viewers 16, 10). Unfortunately, Bishop’s stance here only serves to solidify the opposition she argues against – active and passive viewers, social and corporeal interaction – and the examples she gives for the “rehearsal” of interactivity discourses fall very short of a comprehensive study.⁸¹

Bourriaud, many of the artists he writes about, and most of the theorists – such as Bishop – that follow his lead (critically or otherwise) largely ignore the body as more than a vessel for consciousness (and thus social interaction), recent technological innovations

⁸¹ The three rehearsed examples Bishop gives for interactive arts trajectories include: *Ambiente/Arte: dal Futurismo alla Body Art, Installation Art in the New Millennium* and *Installation Art: A Critical History* (Celant; Oliviera; Bishop). The first is an outdated exhibition catalogue from 1976 with no interactive works that resemble those being produced today and studied in this dissertation; the other two are surveys of installation art more generally (the latter of which is by Bishop herself) that include very few (in Bishop’s case, no) digitally interactive pieces, and are a far cry from the careful and insightful critiques that both Bourriaud and Bishop aim for with their own proposed aesthetic frameworks.

In the aforementioned *Installation Art*, Bishop is perhaps more sympathetic to embodiment and interactivity than she is in her *Participation* book, but only when it pertains to experience rather than action, such as with Minimalist art, or to the *potential* for interactivity. Her portrayal of the “embodied viewer... insists” only on the “*presence* of the viewer [as] the key characteristic of installation”; these bodies need their “senses of touch, smell... sound [and] vision,” but are not active beyond perception (Bishop, *Installation Art* 6, my emphasis). When Bishop writes about works that “discourage you from contemplation and insist that you *act*,” the ‘acting’ she writes about is only propositional. These works ask viewers to “write something down, have a drink, or talk to other people” within a given space (Bishop, *Installation Art* 10). They do not provoke participants materially or respond in kind; although their proposition is, these activities are themselves not integral to the work’s completion, as is the case with the works examined in this dissertation.

in art,⁸² and material interactions in the gallery space. These three areas of investigation admittedly have little to do with his thesis or the highly acclaimed work that Bourriaud and his peers discuss; but their lack nonetheless reveals a large gap in relational art dialogues.

This dissertation takes inspiration from Bourriaud's and Bishop's texts but proffers an approach and framework for embodied inter-active relations rather than social participation. This is not to say that such interactive modes are mutually exclusive,⁸³ but that yet other criteria can be productively applied when approaching art works that engage with embodied and material interactivity as their point of departure. While relational aesthetics is "devoted... to the world of exchange and communication, the world of 'commerce,'" (Bourriaud, *Relational* 42), the implicit body approach concentrates on emergence and corporeality, the world understood through affect, movement and sensation.⁸⁴ Instead of critically asking about dialogue and existence, it interrogates continuity and co-original becoming. Both modes of interactive art place forms in relation to one another and make temporary and exploratory corpuses within the gallery space. They both explore relationality, the goings-on in the exhibition space, interactivity and participation. In the case of the works discussed in this dissertation, however, the forms are somatic, not just social, and the corpus is embodied rather than based only in discourse. The interactivity interrogated with the implicit body approach asks us to relate in a different way: through (and as) flesh, rather than (or in addition to) our socioeconomic standings in the world. Here, bodies make the world go round.⁸⁵

One example of a work that might be profitably approached this way is Brian Knep's *Healing Pool* (2008, see Figure 13, page 73). Here the artist continues his ongoing exploration of biologically inspired generative algorithms. This room-sized Petri dish features a floor that is covered in projected 'cells' that active participants walk through/over, leaving tears and empty space in their wake. The installation then 'heals' itself by growing new cells as seams and scars, never again to repeat any of its previous

⁸² The influence of global technologies, most specifically the internet, makes an occasional appearance in *Relational Aesthetics*, and more so in Bourriaud's follow-up book, *Postproduction*. Bourriaud does not write about digital interactive art directly in either of his two published books, however, and in fact reveals disdain for new media when he says that the "traps" of "calculated" and "so called computer graphics... synthetic fractals... images" and "gadgets," explore "arcane mysteries" and merely act as "illustration" (*Relational* 68-70)

⁸³ In fact, Chapter 6 of this dissertation looks to frame precisely the co-mingling of social participation and embodied interactivity.

⁸⁴ See Section 3.1 and *Parables for the Virtual* (Massumi).

⁸⁵ Paraphrased from Diane Perpich's writing on Jean-Luc Nancy. See Sections 5.1 and 5.2 for more on Nancy and for the full reference.

patterns. Knep's work pushes at the conceptual boundaries of how we understand growth, healing, organic structures and temporal inter-activity. It is a work that is mostly playful on its surface, and extremely subtle in its visual difference over time. So subtle, in fact, that it is very easy to miss his doubled gesture towards emergence theory: both how simple systems can create complexity, and how our collaborative embodied interactions, which seemingly change little, have lasting and forever-changing effects.⁸⁶

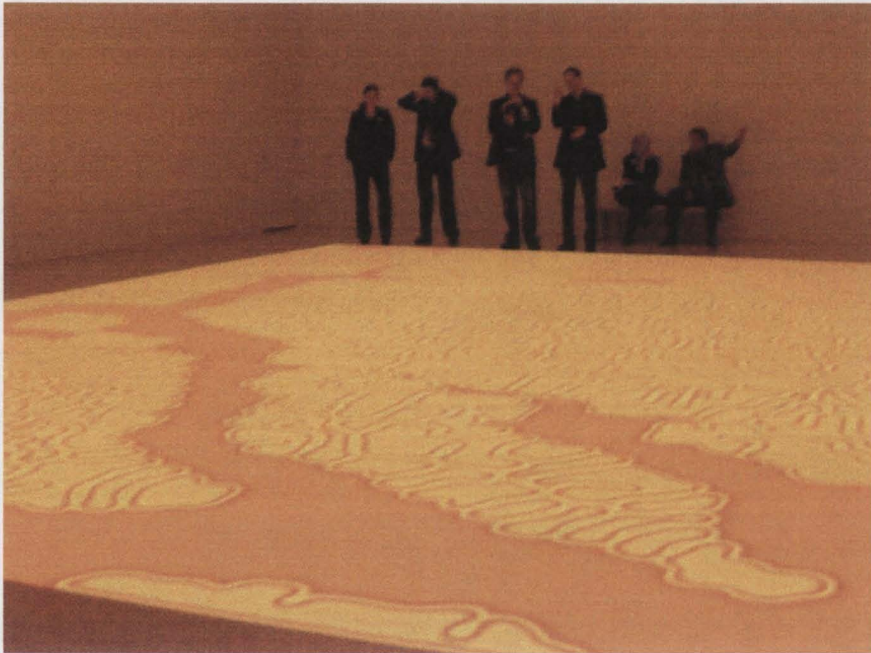


Figure 13, Healing Pool by Brian Knep, 2008. Photo by Nathaniel Stern

Knep's is a fine example of both the similarities and differences between the works presented in the rest of this dissertation and those Bourriaud writes about. Like Bourriaud's relational art works, a piece such as this goes "beyond its traditional role as a receptacle of the artist's vision, it now functions as an active agent, a musical score, an unfolding scenario, a framework that possesses autonomy and materiality to varying degrees" (Bourriaud, *Postproduction* 20). As this chapter has argued, here is a situation, a potentialized context ready for transformation among agents – the "work" is in the event that continues to occur in and with its space. We must focus, as with all relational art, on the behaviours this piece generates, the relationships that create and transform the art and the viewer over time. But in Knep's case, with the implicit body approach this dissertation presents, we concentrate on bodily rather than (or in addition to) social

⁸⁶ This summarization of Knep's piece is edited from my article that first appeared on Rhizome.org in October 2008, "Action, Reaction and Phenomenon".

relations. The implicit body approach to relational art engages pre-conscious movement and experience, while Bourriaud's relational art is more reflective on our identities – social, economic, political, etc. – in the world. In other words, while the works that Bishop, Bourriaud and others write about encourage relationships, participation and interactivity, similar to the explicit body performance artists, their engagement is with how we *understand* our selves in the world (with the body-image). Art works that encourage implicit body interactivity, on the other hand, engage with how we move, transform, *are* (with the body-schema). The difference is key.

Bourriaud proclaims that relational art is a “set of artistic practices which take as their theoretical and practical point of departure the whole of human relations and their social context, rather than an independent and private space” (Relational 113). By comparison, implicit body art takes as its point of departure the whole of *embodied* relations and their material and inter-active situations, rather than an individual and extant body (or “consciousness”) that passively consumes an a priori world. The latter work does not ask us to move towards utopia or inhabit the world in a better way; it rather investigates the *enactment* and mutual constitution of body and world, asking us to explore performance and corporeal relationships as powerful means of being, thinking and knowing.

The following chapter takes this – the implicit body – approach and turns it into a critical framework. I aim to intentionally open up interactive environments to new criteria and critique, which befit an understanding of the implicit body and contemporary art. The remaining chapters will then use said framework to unpack situations that push us to chase or stutter or build or write with our bodies, rigged-up art works that intervene in our incorporating practices, events that beg questions of how we relate corporeally, and what that implies. This approach enables a thinking through of interventions in movement and continuity that are located outside of the hegemony of the visual, counter to the disembodiment discourses often found in digital domains, and open to the productive paradox(es) that being bodily ‘is.’ It does not, like Massumi’s or Hayles’ or Hansen’s texts, turn to art in order to explain philosophical theories, but rather, uses contemporary philosophies, coupled with concrete areas of investigation,⁸⁷ to further understandings of embodiment and interactive art, together. It does not, like Bourriaud or Bishop, concentrate on the social aspects of participation, but rather on the material activities that

⁸⁷ The four key areas of investigation in the implicit body framework are: artist inquiry, description, inter-activity and relationality; these will be covered at length in the next chapter.

constitute per-formed bodies. At stake, is art that situates a continuous embodiment which is interactive, relational and implicated, deeper insight into, and potential strategies for, interventions in our ongoing enfleshment.

...and the body is not just a passive recipient of information, but an active participant in the process of knowledge-making.

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4 A Critical Framework for Interactive Art

4.1 Introduction

As argued in the previous chapters, an implicit body framework for understanding interactive art (and embodiment) must concentrate less on the apprehension of art (and the body) through visual and linguistic signification, and more so on the amplification of bodiliness – of affect and sensibility – that takes place in the potentialized context of interactive art. This framework needs to be sensitive to the historical languages used for understanding art, the body and visibility, while taking into account how the body-image and body-schema interrelate (both corporeally and incorporeally) *and* co-emerge, and directly address the material interactions and the relational per-form-ance of body and world.

The implicit body framework does not only recount, as we've come to expect from most well written criticism in the contemporary art domain, a given artist's individual inquiry and process, and a description of the art work itself. It also attempts to re-member *how we interact* – our literal, physical movements over time and in space, our affect, movement and sensation, breathing, running and grasping, for example, described in detail as the 'work' – the work of art, *and* the work of embodiment. In implicit body case studies, the actual (and actualizing) 'activity' of inter-'activity' is genuinely given priority over the projections we might look at or the sounds we might here within the gallery space. Here inter-activity is enaction, is practice, is affect, is (the) 'work.'

The framework also, and more importantly, endeavours to analyse *how we relate* in and of and as these interactions. Interaction and performance are, of course, inseparable from relationality and co-emergence, but here they are divided out and given equal measure so as to ensure a concentration on both our literal, physical movements, and what and how they per-form. The implicit body framework attempts to name and unpack the (unnameable) "sensible concepts" of a 'work,' the physically active experience of ideas, of becoming, of emerging *along* with that with which we interact. In 'inter-acting,' we are not only 'working,' but *are* the 'work,' the relationship(s), the ways in which body and world not only perform but trans-form one another. To better understand interactive art and embodiment, we must approach the multiplicity of ways that we and they *relate*, with as much specificity as is possible. This chapter outlines a critical framework for doing so.

Section 4.2, “The Implicit Body Framework,” puts forward, in detail, four key areas of examination for interactive art; it describes how these areas, when studied together, enable a deeper understanding of embodiment and interactivity than is offered by the prevalent modes of critical analysis for interactive art. Section 4.3, “The ‘with’ of Implicit Body Thematics,” further unpacks the fourth area of examination in the framework and argues for the productivity in exploring relational couplings between embodiment and varying themes often found in contemporary art. Implicit body thematics draw out particular co-emergent relationships within the larger rubric of the implicit body in order to specify how they intervene in, and deepen our understandings of, the interactive and relational performance that is embodiment. Here I have chosen to use the adjective, “thematic,” rather than the noun, “theme,” because it is more reflective of a sensible concept: adjectives must always be in relation to something else.⁸⁸ In this dissertation, implicit body thematics differ from traditional conceptually-based themes in that they aim to investigate the materiality and form of our relationality; thematics require (inter)activity. Any number of implicit body thematics can be applied to a given piece in order bring more insight into its study. Finally, Section 4.4, “Flesh-Space: the work of Rafael Lozano-Hemmer,” briefly analyses some of artist Rafael Lozano-Hemmer’s oeuvre, utilizing the critical framework set up in the preceding sections. It aims to highlight how the framework, when coupled with even one thematic, can facilitate a more thorough investigation of embodiment and interactive art.

The remaining chapters of this dissertation will then discuss a selection of interactive artists and art works, each chosen because of their exemplary activation of the implicit body through incorporating practices, and their widely recognized contributions to the field of new media art at large. In these intensive and extensive case studies, I will use the implicit body framework to describe and unpack how each piece uses movement and relationality to address interactivity and embodiment.

4.2 The Implicit Body Framework

Most succinctly, the four areas of examination in the implicit body framework are: artistic inquiry and process; artwork description; inter-activity; and relationality. Respectively, they will show what kinds of questions the artists were exploring in

⁸⁸ Both “thematic” and “theme” are, respectively, an adjective and noun that categorize how something relates to, or constitutes, a topic of discourse.

production;⁸⁹ how each installation works both technically and sensually; what viewers see, do and experience through their active engagement with the piece; and, the complex relationships that are accented as emergent through this embodied dialogue. The latter two areas of examination are the most crucial to the implicit body approach and framework, and, this dissertation has argued, what are most often left out in critical readings of interactive art. There will, of course, be a blurring between each of the implicit body framework's four areas. But this approach, which attempts to give equal weight not only to intent and content / substance, but also to material interactivity (the active co-emergence of the body and the art work) and the relational feedback loops that affect and are affected by said interactivity, is precisely the strength of my thesis. All four areas of examination will be described and exemplified in greater detail throughout this and the next section.

The first area, how an artist approaches their work – critiques what it is doing and reapplies it while it is still in production – obviously affects our readings of the finished piece. How the artist frames it in the gallery, titles it, writes about it on the wall description and in their catalogue or on their web site, all feed back in to how we understand, interact and engage with it. These are thus presented as part of the implicit body framework, as the artist's inquiry.

One excellent example of an art work that might beneficially be read with the implicit body approach – and more importantly the critical framework that is put forward in this chapter – is Golan Levin and Zachary Lieberman's collaborative project *Messa di Voce* (2003, see Figure 14, page 82). This pair of artists, whose partnership is sometimes referred to as Tmeme, are both individually and collectively known for their interactive installations, performances, net.art works, technical contributions, teaching and research in the fields surrounding digital art. Both have won places in coveted exhibitions, prestigious grants and prizes at Ars Electronica and its 'Prix' international competition for cyberarts, and both have contributed greatly to open source and educational developments for new media creatives more broadly.⁹⁰ *Messa di Voce* lives as both an interactive installation and feature-length operatic performance – the latter with experimental singer/performers Jaap Blonk and Joan La Barbara. It grew out of several

⁸⁹ Taken from interviews with, and texts by, the artists themselves.

⁹⁰ Lieberman, for example, is both a former student of Levin's as well as a former lecturer of Theodore Watson's, the artist behind *audio space* (see Section 2.3); along with the latter, he is the core co-developer of openFrameworks. More on Levin and his work at <http://www.flong.com/>, and for Lieberman, <http://thesystemis.com/>

Tmeme collaborative projects where the artists were exploring “the aesthetic implications of making the human voice visible”; they wanted to use interactivity to invite explorations of “spatio-temporal relationships between sound, image, and the body” (Levin and Lieberman, *Speech Visualization 1*).

Since we are not seeing the art work ‘in the flesh,’ the implicit body framework’s second area of examination calls for a detailed description of the piece – what it looks and sounds and feels like, how it responds to us in the gallery or performance space. Tmeme’s *Messa di Voce* software, for example, “augments the speech, shouts and songs produced by a pair of vocalists with real-time interactive visualizations” (Levin and Lieberman, *Messa Site*). Multiple computer vision techniques are employed, “not only to track the locations of the performers’ heads, but to estimate the orientations and positions of their bodies as well” (Levin and Lieberman, *Speech Visualization 5-6*). Their computer system additionally “captures audio signals coming from the performers’ microphones, and extracts features such as pitch, spectral content, and autocorrelation data” (Levin and Lieberman, *Speech Visualization 5-6*). In response to real-time position, movement and sound, a creative array of visualizations are projected on to screens immediately behind the performers. “Owing to the head-tracking system, these visualizations can be projected such that they appear to emerge directly from the performers’ mouths” (Levin and Lieberman, *Speech Visualization 5-6*).

In *Messa di Voce*’s 30-40 minute, semi-improvisational theatrical event full of “unpredictable spontaneity” (Levin and Lieberman, *Speech Visualization 3*), Tmeme and their collaborating performers serialize 12 audiovisual and performative vignettes – both solos and duets – which each use drastically different particle system / generative algorithms – what Lieberman calls implicit, rather than explicit, animation – in relation and response to Blonk and La Barbara’s embodied song and dance. As demonstrated in Figure 14 and in the online videos,⁹¹ these complex interactive animations, individually: turn emphatic breathing into throbbing geometric shapes; transform man-made and storm-like sound effects into generatively forming clouds; convert vibrato sounds into rippling waves of water; map song and movement to the body in space; rework face distorting raspberry-like and baby-esque sounds as animated and circular music boxes (which can be re-triggered by the performers’ movements in order to play back the audio that created them in the first place); and stage operatic and duel-like battles between the

⁹¹ For video and more photographic documentation, see <http://www.tmema.org/messa/messa.html> (Levin and Lieberman, *Messa Site*).

singers, their weapons / charges including smoky fluids, porcupine suits and painterly forms.

Each new scene in *Messa di Voce* builds on the last, asking for more or less activity from the performers both in their bodies and with their embodied music-making. For example, the show begins with one of its singers standing completely still and simply breathing geometric shapes into existence on the screen behind them. This scene slowly transforms itself, performatively, visually and sonically, as the singers and scenery erupt into a flurry of storm clouds. This in turn sets the stage for operatic sequences that ripple out into the projected motion of water, which in turn morphs into an intense 'battle' between two competing and embodied noise machines / performers, each emitting and directing enveloping billows of smoke from their mouths and bodies. According to the artists, "Utterly wordless, yet profoundly verbal, *Messa di Voce* is designed" (Levin and Lieberman, *Messa Site*) to accomplish the "fiction that the voice can be seen" (Levin and Lieberman, *Messa Report 4*) and thereby "provoke questions about the meaning and effects of speech sounds, speech acts, and the immersive environment of language" (Levin and Lieberman, *Messa Site*).

The performance version of this piece is meant for audience members to watch, while the installation uses the same software in an interactive and participatory mode, granting gallery-goers access to each of the aforementioned 'scenes,' so they might spawn geometric shapes or storm clouds, perform sonic battles that are engendered as tidal waves or smoky fluid, etc. Both versions present the possibility for playing out, intervening in, and amplifying an embodied interactivity, and interactive embodiment, through the relationships they precipitate. With the implicit body framework, this chapter proffers a way to read that play / intervention / amplification, in order to better understand what the work is doing, how it is done, and what is at stake in the interactive relationality it helps to enact.

Traditional readings of digital interactive art and new media tend to stop after the first two areas of examination in the implicit body framework. This chapter argues that it is the latter two areas – interactivity and relationality – that enhance understandings of interactive art and embodiment because of their engagement with the performed elements of body and world. The phenomenologically-inflected approach this dissertation proposes looks, specifically, at action and experience. In other words, most visual- and linguistically-based writing on interactive art – like Manovich, Grau and Paul, each

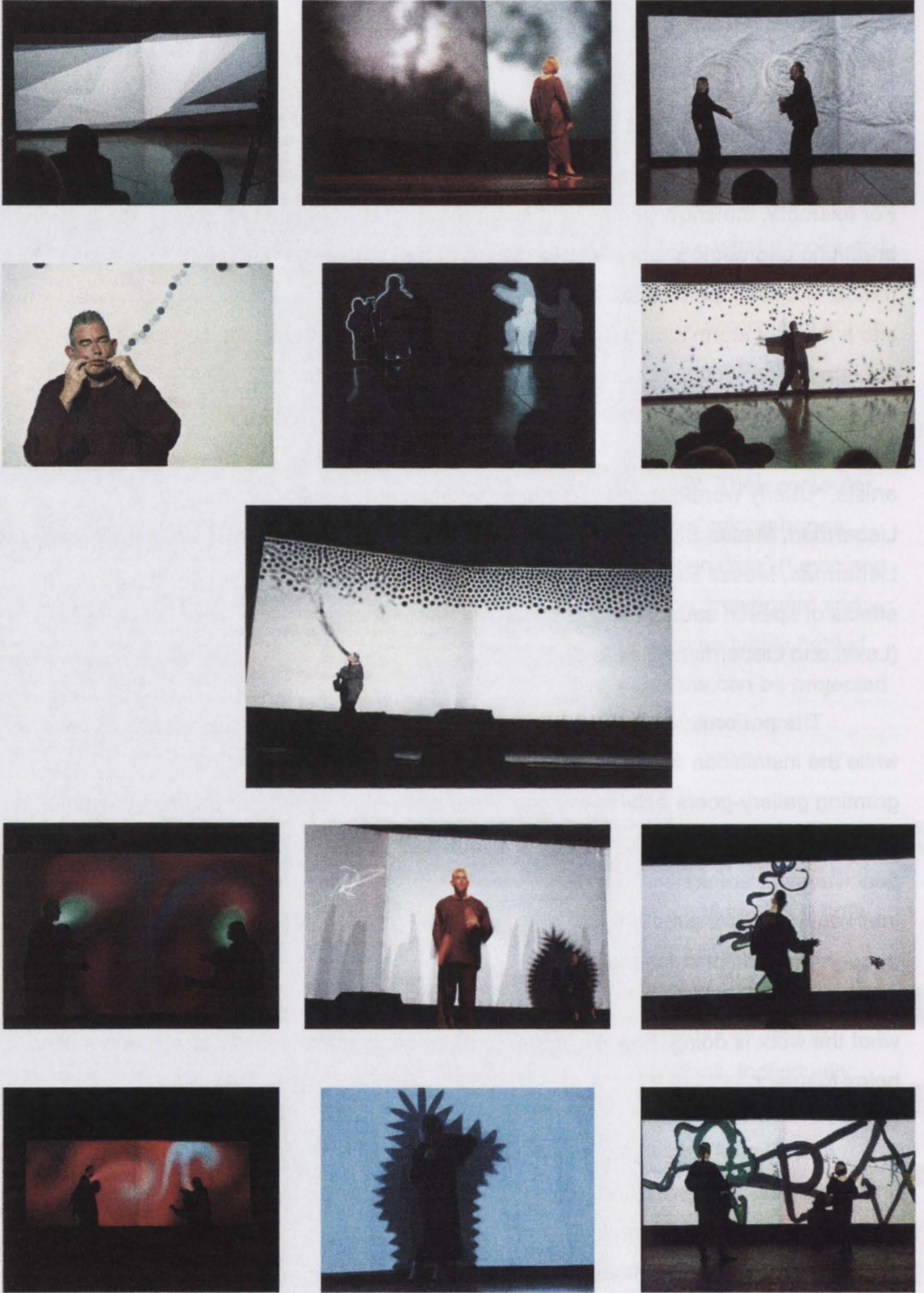


Figure 14, *Messa di Voce* (performance), Golan Levin and Zachary Lieberman
with Joan La Barbara and Jaap Blonk, 2003
interactive installation and performance, dimensions variable

discussed at length in Chapter 2 – explains that a given piece *is interactive*, and *how it is interactive*, but not *how we interact*. This, the third area of examination in the implicit body framework, is essential to the understanding of the viewer-participant (performer) as integral to the work of art. The viewers' and art work's interactions must be discussed extensively.

It must be noted here that since its focus is on the primacy of action and experience, page-bound but demonstrative studies of interactivity are no small task. The large number of printed images presented within this text – for *Messa di Voce*, and for the case studies that follow – will quite literally be a series of snapshots (sequentialized images, Zeno stop-points), and the process of writing out how participants are moving and interacting in these photos simultaneously runs the risk of rendering incorporation as inscription.⁹² Web addresses to online video documentation will be provided for each piece, but even then, those who choose to view the art works (assuming they are still online when you read this) will not be experiencing them with their bodies, in space and in relation.

In other words, I can describe in text and images what an artist intends and how he or she tries to realize it; I can point to videos that show what a piece looks like and does in response to the participants that engage with it; but the *interaction itself* will always be absent. How we move, sense and feel, and even more importantly, what this *does* and *makes*, how we *relate* (and thus how we co-emerge), the *work* of the work of art, the inter-activities that are integral to it, and to us and our embodiment, can never be sufficiently captured and presented. It is precisely this resistance to representation, the process and performance of embodiment, that the implicit body framework demands we address.

In the case of *Messa di Voce*, for example, one of the more fascinating aspects of the work is how its performer-participants – whether Tmeme's operatic collaborators or interacting 'viewers' in the gallery space – almost automatically exhibit grand physical gestures along with their enunciated sounds. Circular arm sweeps are instinctually deployed along with songs of "Ooooh," and repetitive, seemingly angry, hand waves from under the chin/neck and outward across the stage or room are spontaneously executed in tandem with tongue-rolling cries of "PHBTTTTTTs" that are worthy of a 2-year-old's

⁹² See Chapter 3 for more on the Zeno paradox and Katherine Hayles' distinction between inscription and incorporation.

appraisal. Each scene beckons atypical gestures that should be studied – not merely mentioned as possible – precisely because of how atypical they are. These awkward interactions are an amplification and re-situation of the body’s activity. They are no more or less inter-active than our ongoing and processual embodiment in the everyday, but they are exactly *not* everyday, in that they are both out of the ordinary and put in quotes. The “Oooohs” and “PHBTTTTTs” and their accompanying gesticulations are, this dissertation has effectively argued, interventions in movement and continuity – in the emergence, potential and relationality of the body – and can thus offer insight into embodiment at large.

The affective gestures of the interactor in interactive art must be described in detail in order to ask, as the fourth area of examination in the implicit body framework does, “What do these movements tell us about our material relationships to the world? How might they deepen our understandings of embodiment (and interactivity)?” *Messa di Voce*’s activities expounded in the last paragraph, for example, might be said to bring to light the “shape” of our sounds and signs. Soothing arm sweeps usher in sorrowful “Oh” songs while angry spittles, hand waves and chin juts are accompanied by rolling tongues. And although these two gestures are on opposite sides of the emotional and emotive spectrum, each shows how both movement and language co-emerge and define one another. Our interactions in *Messa di Voce* highlight how material bodies know, perform and relate to their visual, linguistic and sonic communications. They reveal the performative, real-world implications of how what we say affects, is in fact a parallel to, what we do. Here body and sign continuously co-emerge from their relation, are made concrete – both conceptually and corporeally – through a concurrently physical and symbolic enactment.

The fourth area of examination in the implicit body framework asks us to *think through* our specific interactions, how their physical-conceptual relationships transform us and the world around us, invite us into our own potential to vary by means of how we interrelate. Following on from the arts trajectories and techno-philosophies introduced in Chapter 3, where the ‘explicit body *in* performance’ uses the stage to put aspects of the objectified body-image in quotes, the ‘implicit body *as* performance’ *rigs* quotation marks around the emergent body-schema *and* its contrapuntal relation to something *e/se*.⁹³ The implicit body framework attempts to analyse and examine technological art as a materially

⁹³ See Section 3.2 for more on the body-image and -schema, Section 3.4 for more on the explicit body and “quoting without quotation marks,” and Section 3.5 for more on the “rig” of interactive art / potentialized contexts.

performative proscenium for, and artistic framer of, 'embodiment plus X' – X being a variable or variables (language, temporality, architecture) feeding back between the artwork and its participant. This formula is not meant to say that embodiment and X are either separate to begin with, or that they are 'added together' per se; it is a heuristic device to show the implicit body framework as able to contextualize and highlight our interactive and amplified bodily performances of / with / in, for example, meaning or time or space.

Interactive art works like *Messa di Voce*, this chapter argues, enable participants to explore their embodied relationships to processual categories – sensible concepts, as Massumi calls them – such as meaning-making, temporality, spatiality, visuality and bodiliness itself, among other things.⁹⁴ Each of these categories should be paid attention to individually, and each additional reading through any one of them would be a slightly different utilization of the implicit body framework – all of them implementing the concepts and approach laid out in the preceding chapters in order to deepen understandings of both embodiment and interactive art.

The following section attempts to incorporate the specified relationality, outlined above, into the implicit body framework's method of inquiry. It first turns to French philosopher and scholar, Jean-Luc Nancy, to address the subtleties of co-emergence, the care with which they must be approached. It then argues for, and begins, an ongoing list of what this dissertation calls implicit body thematics. As suggested in this and the last section, thematics are relational couplings between embodiment and varying conceptual categories / sensible concepts often found in contemporary interactive art. Where sensible concepts are, in Massumi's words, "the physical experience of ideas," implicit body thematics are an approach to, and frame for, understanding how we experience, inter-act with, and processually per-form those ideas with/and their material counter-parts. They are used to explore, and deepen our understandings of, interventions in the body's (and world's) performance.

4.3 The 'with' of Implicit Body Thematics

The practical and critical application of the implicit body approach must be attended with the same nuance of the concepts and materials it engages with. The framework needs to show deference to the complexities of emergence, whilst still

⁹⁴ See Section 2.8.

enabling a critical and thorough investigation of the body's relationality in interactive art. One major difficulty in unpacking co-emergent relationships between 'embodiment and X' is that to set up and discuss the relation of two things (which are precisely *not* things), we must first name them; and by naming them individually, we run the risk of treating them as explicit and separate (and as things). If we are to engage with them together and as continuous, with how they are always already implicated in one another through and with and as their interactive and incipient co-emergence, it is necessary to start with the 'with' of their relation.

Jean-Luc Nancy, in his writings since the early 1970s, has spent the majority of his career exploring precisely this 'with.' He was chosen as a key reference here because his thinking on embodiment extends phenomenological approaches to being in the world to include a more refined understanding of relationality.⁹⁵ For Nancy, 'with' is the precondition for emergence. Nancy's reasoning provides a general mode of thinking that I apply to each individual implicit body thematic.⁹⁶

In his book, *Being Singular Plural*, Nancy contends that Heidegger's *Being and Time* departed from the "self-sufficient positing of the subject" (that is, "the conception of the individual as a single and undivided entity"), who "relates him or herself to others or to the community only secondarily," in order to assert the "primacy" of "relation" (Devisch 241-242). Here Heidegger posits that a subject only "is" when they are in relation to, and interacting with, the world around them. Nancy argues, however, that even in his revolutionary phenomenological critique of being (singular), Heidegger first sets up being (Dasein) before going on to his exploration of being-with (Mitsein). Nancy maintains that this is a mistake, that "throughout the history of philosophy" "being-with" has been wrongly "subordinated by 'subject' or by 'being'" (Devisch 242). He thus "unambiguously places the 'with' back into the heart of being" at the outset of his thesis (Devisch 242). For Nancy, "being" is always "being-with."

Nancy puts this understanding of being-with, of being in relation to others, into the broader conceptual frame of a community. In his thinking, the "primal ontological conditions of our community," and of our being, are not found in the subjective I, the Other

⁹⁵ Most specifically, Nancy extends the work of Martin Heidegger and his best known book, *Being and Time*, which is largely considered one of the most influential philosophical works of the 20th century.

⁹⁶ Worthy of note here is Jacques Derrida – the father of deconstruction – and his final book, *On Touching: Jean-Luc Nancy*. In it, Derrida uses Nancy's texts as a foundation to review the histories of the philosophies surrounding the sense of touch.

or the We, but in the “‘with’, ‘relationality’, and the ‘between’” (Devisch 244). ‘Being’ is always ‘being-with’ because one cannot ‘be’ without ‘being in relation’ to other beings (who are beings in relation as well). Community and being make one another, co-emerge from their interactive relations.

It is important to understand that the word ‘with’ in this coupling is not “an adjective” but the “prerequisite for, and makeup of, every action, material and meaning.” ‘With’ “is not just a mode of being in the world. It is our ‘transcendental’ condition, anterior to any presence, consciousness, or intentionality.” But even the word ‘anterior’ here can be misleading as the “ ‘with’ is co-original with every ‘there’, every consciousness, every constitution,” not before or behind it (Devisch 250, 245). In Nancy’s understanding, the “question of being (*Seinsfrage*)” is identical to “the question of being-with (*Mitseinsfrage*). So being-with is a tautology” (Devisch 244).

One of Nancy’s most lucid explications of the relationality of being can be found in his discussion of the word and concept, ‘people’. The phrase ‘people’ “expresses that we are all of a similar kind: we are precisely people, human beings with such and such common attributes” (Perpich 80). Still, there is not one person that can represent all of ‘people;’ and not one individual that can be said to make up the whole of what it means to be a person. ‘People,’ in turn, can exist only as they are “numerous, dispersed, and indeterminate in [their] generality” (Perpich 80). The existence of ‘people’ can “only be grasped in the paradoxical simultaneity of togetherness (anonymous, confused, and indeed massive) and disseminated singularity (these or those ‘people(s)’, or ‘a guy’, ‘a girl’, ‘a kid’).”⁹⁷ And, argues Nancy, the term ‘people’ does not have any meaning or origin outside of this “coexisting collection, this being-with, of plural singularities” (Perpich 80).

Nancy’s “plural singularities” here are all individuals, but each singularity can only exist through being part of the plurality, the ‘people’, and this plurality too exists ‘with,’ is formed by those self-same singularities. ‘We’ (the people, the community), like being, are constituted as a co-original shared becoming that Nancy calls “partagé.” Nancy scholar Diane Perpich examines what this term means for Nancy, in her discussion of meaning as co-emergent:

The French term *partagé* can mean that which is shared in common but also that which is divided or shared out among a number of different

⁹⁷ This is an unreferenced Nancy quote/translation taken from Diane Perpich’s “Corpus Meum: Disintegrating Bodies and the Ideal of Integrity” (80).

parties. For Nancy, both meanings are operative: meaning is inextricably part of a “we-world,” a space socially constituted and maintained, but never a homogenous world: meaning is never monolithic or totalizing but always shared out or divided between different subjects, between subjects and things, and between one thing and another. (Perpich 77)

With his concept of *partagé* Nancy complicates the relational “logic” of being-with: ‘we’ emerge as and through our relation to ‘we,’ but our co-emergence, like meaning, arises as something in common *and* shared out across our difference. Here communities and subjects (both plural singularities) co-appear (like bodies and meaning) but one is not the cause of the other, nor is it the same as the other. ‘We,’ “constitutes an inchoate performative: in the process of being formed” (Nancy, *Ground* 106 qtd. in; Ridgway, *Between* 337). ‘We’ (like ‘I’) is, in other words, a per-formance: relational, co-original, in process.⁹⁸ We begin, are always already beginning, with ‘with.’

Applying this ‘with’ to, for example, *Messa di Voce*, facilitates an examination of how the performers’ real-time bodies, the live sounds and animations, all interact and entwine with themselves, and one another. By turning the spoken, sung and sometimes awkwardly playful voice-sounds of live performers into graphic and inter-active elements, the artists create dynamic instantiations of the continuous relationships between body and sign (both visual and sonic). Levin and Lieberman have utilized our embodied in- and unfoldings to play out the processual co-performance of language with flesh. Over the course of this performance, they give voice to how bodies and signs move, feel, deteriorate and interact ‘with’ each other, and their own potential to vary.⁹⁹

And this is just one possible relational reading of *Messa di Voce* and the interactivities in its space, where the implicit body framework – and its fourth area of ‘thematic’ examination – is used to accent how body and language co-emerge. *Messa di Voce* could also be beneficially read as a ‘with’ between/of past and future. Here the performers must engage with the animated echoes of their past bodies and sounds,

⁹⁸ This understanding of collective per-formance – which, when applied to embodiment, is similar to Mark B.N. Hansen’s body-schema (derived from Maurice Merleau-Ponty; see Section 3.2) – includes the emergence of being from, and in, “all directions at once” (Perpich 78). In other words, people and communities and bodies and language and space and meaning and world all “co-appear” *with* each other (Devisch 252). As with Hansen’s (following Simondon) transductions (Section 3.2), none are the cause of the others, and all are necessary for the others to exist, or rather, to emerge.

⁹⁹ Contemporary dancers also often work with interactive software to similar effect. Some include, but are not limited to, Troika Ranch, Jeannette Ginslov, Merce Cunningham and Philippe Decouflé. My work with Ginslov will be briefly visited in Section 7.4.

bringing a vitality to the potent present. Their temporally juxtaposed bodies interact as an emergent body-image *and* body-schema; they exist only as relational, across time, always already implicated with/in one another. Or one could add to this engagement by looking at the co-emergence of body and space – whether the latter refers to the stage, or the building, or the dynamically spatialized flux between bodies / performers. And so on. Each relation is a sensible concept that is always ‘with,’ and approached as a thematic adjective that is also not an adjective because it is both co-per-formed, and a prerequisite for the performance.

The conceptualization and application of implicit body thematics is informed by Nancy’s careful thinking in just such a way. Every thematic is both a theme and an action, a careful reading of the ‘with’ of the incorporating practices we perform and embody with interactive art. When, in this and later chapters, I write about relational couplings such as Flesh-Space, Body-Language or Social-Anatomies in interactive art, there is an implicit ‘with’ both in and between my terms. Neither flesh nor space, for instance, can become without the other; this thematic is intended to explore artistic interventions in the co-emergence of embodiment *with* space. And since bodies co-emerge not only with space, but with meaning (Body-Language), with society (Social-Anatomies), and with a plurality of other sensible concepts, the thematic approach presented here offers the possibility for multiple readings of any given interactive art work. Thematics advocate a specific exploration within a mass of co-emergent categories. In other words, implicit body thematics provide a platform for thinking through, for example, Flesh-(with)-Space and/or Body-(with)-Language and/or Social-(with)-Anatomies (the list is ongoing) individually and with a difference, whilst still attendant on the continuity and relation of the others. Within any given thematic, the body is always understood as co-emergent ‘with’ both the conceptual category of that thematic, and all others, all at once. Implicit body thematics are, put differently, themselves emerging and in relation. But as tools and as guides, they point to discrete possibilities for better understandings of embodiment and interactive art.

The implicit body framework is an analytical guide for interactive art, a mode of inquiry for interventions in incorporating practices, a method of digital arts criticism that acknowledges the complexities of our embodied interrelations and aims to deepen the level of reflection on, and questioning of, all of the above.

4.4 *Flesh-Space: the work of Rafael Lozano-Hemmer*

The rest of this chapter uses the implicit body framework to critically examine some of the work of Rafael Lozano-Hemmer using the Flesh-Space implicit body thematic. This thematic aims to engage works that intervene in the co-emergent relationships between embodiment and space – whether architectural or otherwise. Lozano-Hemmer has been selected here because his process, and the eloquent language he uses to describe it, is remarkably congruous with the implicit body approach, and so serves to introduce the framework and its case studies very well. He is also widely recognized as a world leader in the field of digital art and interactivity. As per the implicit body framework detailed earlier in this chapter, the study will dissect the artist's process, describe his work, and investigate how we interact with it, before turning to the relational thematic of Flesh-Space.

Lozano-Hemmer is a Canadian-Mexican artist who develops large-scale, public, interactive installations that, according to the artist, attempt to “transform urban spaces and create connective environments” (Relational Architectures). In his own words, “Using robotics, projections, sound, internet and cell-phone links, sensors and other devices, his installations aim to provide ‘temporary antimonuments for alien agency’” (Lozano-Hemmer, Information). Here, the adjective ‘temporary’ refers to the ephemeral nature of his technological and performative installations; and Lozano-Hemmer uses the term ‘antimonument’ because, while the works’ scale is often monumental, the installations *are* an event, rather than a monument commemorate one. He explains that when he uses the word ‘alien,’ he means something

that's foreign, that's non-contextual, that comes from a disparate plane of experience. Many times I use the word ‘alien’ to replace the word ‘new’ as an acknowledgement of the impossibility of originality. When I work in a public space, I don't try to address the ‘essential’ qualities of the site, as site-specific installations do; rather, I emphasize artificial connections that may emerge from people interacting with alien memories. (Sullivan and Lozano-Hemmer)

So when Lozano-Hemmer says ‘alien agency,’ the phrase should be read to mean something out of the ordinary. Although participants are responsible for and aware of their inter-actions, the ways they move and experiences they have are foreign. In other words,

Lozano-Hemmer aims to intervene in movement, in the sensorimotor body, in the body-schema.

Dubbing one of his ongoing series of work "Relational Architectures," Lozano-Hemmer claims to focus on the new relationships that "emerge from the artificial situation" of his site-specific installations (Sullivan and Lozano-Hemmer). Relational architecture sets out, he avers, to transform "the master narratives of a specific building" by adding and/or subtracting audiovisual elements and de-/re-contextualizing it via audience participation (for example, through hyperlinked and projected images to other times and spaces). The "alien memories" in these artificial situations may include other buildings, peoples and histories, which are conveyed through their political or aesthetic contexts. The motivation behind his special effects, and the plasticity of the work, is, the artist says, "the modification of existing behaviour... where the building, the urban context and the participants relate in new, 'alien' ways" (Lozano-Hemmer, Rhizome).

For Lozano-Hemmer, a given intervention succeeds when the work "actively modifies the point of dynamic equilibrium between the public's actions and the building's reactions, and vice versa" (Lozano-Hemmer, Rhizome). Central to his practice is the uncertainty of the outcome. While there can be a range of "causal, chaotic, telepresent, predetermined, or emergent behaviours programmed" into his software (Lozano-Hemmer, Rhizome), each instantiation of any given work provokes vastly different interactions from its participants. The art and the viewer are thus per-formed through their relation.

One excellent example of a relational architecture is Lozano-Hemmer's award-winning work circa 2001, *Body Movies* (see Figure 15, page 92). Here he projects an archive of thousands of photographs, one by one, onto large buildings around a square. Each image in this collection was taken on the streets of cities all over the world, and they are shown using powerful, robotically controlled data projectors. From the centre of the square, huge floodlights wash out these images; they can only be seen, therefore, when passers-by block out the light and, with their shadows, reveal the projected photographs underneath. Said shadows range in size from 2 to 25 meters, depending on a visitor's distance from the light, and they are tracked in real-time with Lozano-Hemmer's custom software; if the participants on the 'live' square align their shadows to reveal all the bodies in the image beneath, the program triggers the next image in the sequence.¹⁰⁰

¹⁰⁰ Video online at <http://www.lozano-hemmer.com/video/bodymovies.html>

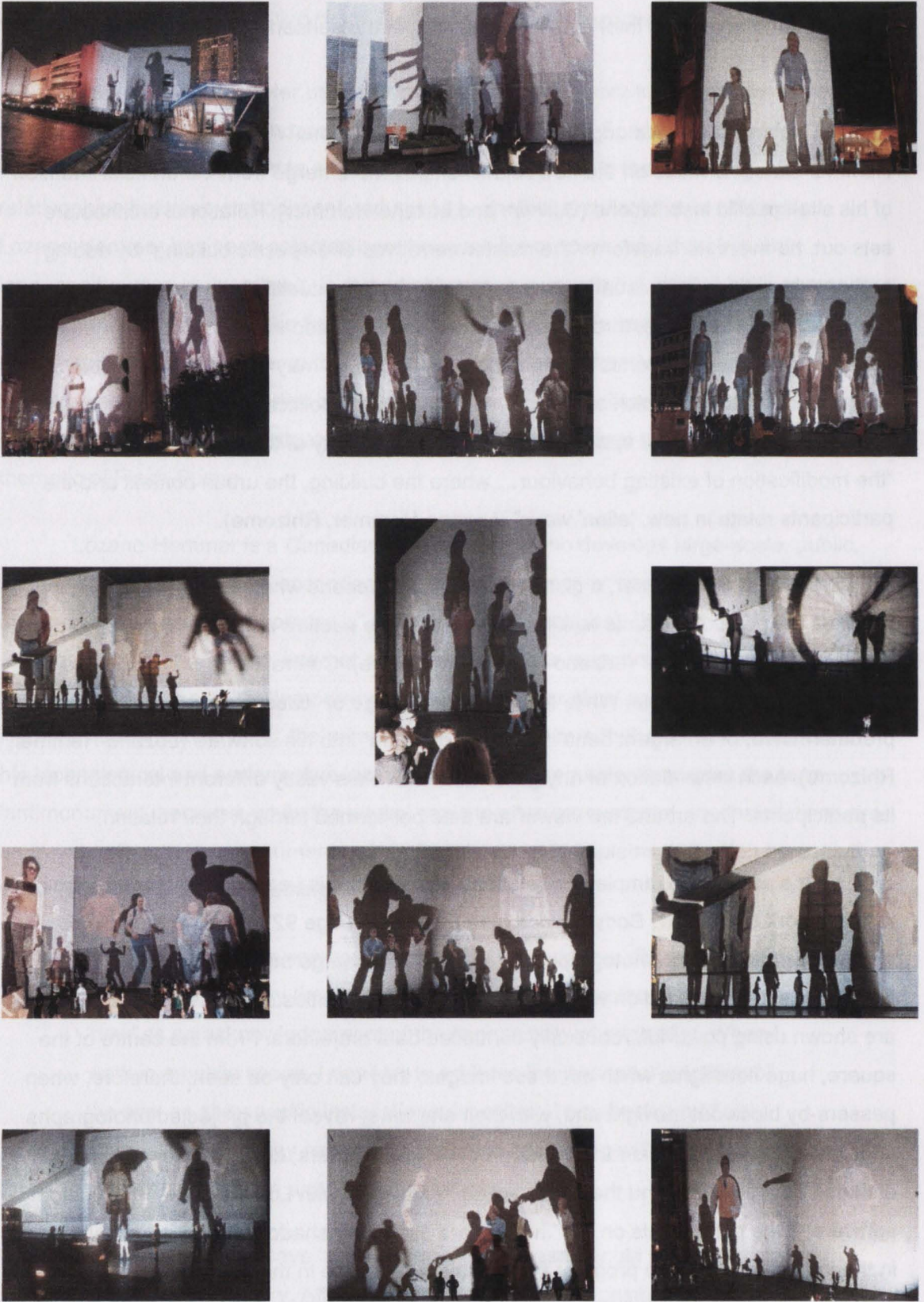


Figure 15, Body Movies by Rafael Lozano-Hemmer, 2001
Interactive Installation and Relational Architecture, dimensions variable

At the outset, “everyone has a sophisticated vocabulary of expression using his or her own shadow” so it is unnecessary “to explain how to participate” with *Body Movies* (Sullivan and Lozano-Hemmer). While interactors immediately understand the interface, however, the experience they engender in performing their shadows is new, “alien,” because of how the sheer size of their shadows changes the architectural space around them. The revelation of other bodies and spaces in the images actively unveiled from beneath these shadows – a play on presence that Lozano-Hemmer ironically calls ‘tele-absence’ – adds another layer of interaction to this experience. Viewers can reveal all, part or parts of the artist’s photographs of people and places, bodies and spaces, from around the world, and they often try to tell a physical story by playing around the image’s contents and/or triggering the next in the sequence.

With regards to how participants physically interact with *Body Movies*, Lozano-Hemmer takes into account the large field between the lights and building, begging for players to make quirky 2-dimensional movies out of, and projected onto, 3-dimensional space. As evidenced in Figure 15 (page 92), the artist’s often dancing and collaborating participants become active agents in an unfolding and infolding narrative of bodies and space, whose flesh – depending on where they individually move – might collectively span several stories high, remain close to their actual size, and everything in between. Together, they create complex shapes, animations and architectures through experimental and repetitive movements.

Would-be static viewers run back and forth between the buildings and lights, shifting their individual sizes relative to other bodies, the architecture, and the photographs of the other architectures and bodies that they are revealing in Lozano-Hemmers database of images. They use these tele-absent and projected forms in relation to each other, to the constructions around the square and to the partially broadcast images in order to shadowbox a giant, swallow a dwarf, smash a building, or carry a friend or foe to safety. They move between intimate and exaggerated gestures, hand shadow-puppets and sweeping and running full forms. They produce animated rabbits and dogs made of hands; poor drinks from on high and eat arms of others down low; ride bicycles or run or skateboard, pulling and pushing each other and across each other and across times and spaces – and all across the 2-D surface of a large building, rallying back and forth in size as they move toward or away from the light. The more creative performers play out complex scenes in the previously photographed international cities, their shadows enabling them to bicycle through Madrid, use real-world umbrellas to protect virtual Italians from the rain, or create multi-armed beasts that grow and shrink as they

scale building walls or invade foreign lands. They can (physically and literally) align themselves with strangers and friends alike, with others present and absent, in the plural singularity of their communally shared space.

Body Movies invites us, says Lozano-Hemmer, to “study the distance between people and re-presentation in public space” (*Body Movies*). The “people on the square... embody different representational narratives,” creating “a collective experience that nonetheless allows discreet individual participation” (Lozano-Hemmer, *Body Movies*). While each active participant per-forms their own bodies through their shadow play, they also engage in per-forming the square and buildings and people around them, the shaping of this space and its continuous relationship to their own flesh as well as to other spaces and bodies, both in their immediate environment and (in images) around the world. In *Body Movies*, participants’ interrelated interactions – all of which they may or may not be consciously aware of – intervene in the co-emergent relationship between a broadly defined and engaged embodiment and a broadly defined and engaged space. Here the implicit body framework highlights how our inter-actions literally draw out the bodies and space that we simultaneously activate and experience, through movement. *Body Movies* productively confuses processual embodiment and architectural space to perform the relationality (with) of inside and outside, personal and public, actual and virtual. That is, it intervenes in the relationships between the inside and outside of both the body and space, between personal bodies and public bodies, between personal space and public space, and between actual and virtual bodies and actual and virtual space.

Lozano-Hemmer’s work accents and amplifies what Massumi calls the “energetic impulses that take place in every level of the body,” in a “distributive” and almost “scrambled” system (Cruz and Massumi). Our co-emergent action and its surrounding space – personal and public, architectural and virtual – are performed and felt “in the flesh,” and we enact and experience the “conversion of the materiality of the body,” and of space, “into an event” (Massumi 14). *Body Movies* severs movement and space from location; it enables viewers to draw out that part of an event that cannot be reduced to the limited image we see on screen. Here our moving, affected and affective bodies evince stories and alien histories that are made sensible in and as space; they are incarnated, together, but fleetingly as something shared and yet not. This sharing and not, present but not, body and bodies, space and spaces becomes, like a topological figure, more than what it is. Both space and bodiliness are potentialized, are accented as “susceptible to folding, division and reshaping... open to continual negotiation” (Kirby). Participants shrink

and grow, live and transform and shift with the spaces and stories they move with and in and as their environment.

The images of absent others are revealed by present shadows in an ongoing and almost paradoxical dance of absence and presence, embodiment and disembodiment. Body and art work, here and elsewhere, are implicated in one another, and each presence is an incipience that is instantiated through movement and interaction. *Body Movies* engages not only the (literal) body-image, but the body-schema: it affectively accentuates the implicit body by amplifying our incorporating practices. Through our moving, interacting, interrelating bodies we make material (and perceptible) space and other. *Body Movies* is a complex layering of per-formance, an unfolding and enfolding that turns the context of 'space' into an embodied and situational, sensible concept: "Flesh-Space."¹⁰¹

Here I use the Flesh-Space thematic to examine the coupled emergence of bodies with space(s). Along with the larger implicit body framework, it succeeds in adding to our understandings of embodiment and interactive art through its detailed attention to material interactivity, and its analysis of one relation within that potentialized context. The framework helps us to understand how space and bodies are made, how interactive art and embodiment are performed. In another thematic reading of the piece, one might analyse how *Body Movies* intervenes in the embodied process of remembering, given that the actively emerging images and narratives with Lozano-Hemmer's work could be seen to question how one makes memories; one could study the co-emergence of bodies and perception, since *Body Movies* literally intervenes in the spectacle of the screen image; one might interrogate the performance of bodies and society, given that the work interrupts both our collective and individual interactions through that which is common and different between them (as with Jean-Luc Nancy's 'people'); or one might look at the un- and infolding of time with flesh, inasmuch as the past and present and future are all gainfully blurred in our interactions with *Body Movies*.¹⁰² Each reading and study would

¹⁰¹ Also see Lozano-Hemmer's *Under Scan* (2005), <http://www.lozano-hemmer.com/eproyecto.html>, Kelly Dobson's *scream body* (1998-2004; this project has additional similarities to *Front*, written about in Section 6.1) <http://web.media.mit.edu/~monster/screambody/>, and Luisa Paragui Donati's *vestis* (2003) <http://paginas.terra.com.br/arte/VESTIS/>

¹⁰² The co-emergence of bodies and society is looked at intensively in the Chapter 6 of this dissertation, through a thematic I call Social-Anatomies, and the co-emergence of time and bodies is briefly discussed in Section 8.4, with a thematic I call Tangible-Temporality. Although it is well beyond the scope of this dissertation to visit all possible sensible concepts through implicit body thematics, Section 8.3 also touches on the co-emergence of at least one sense of perception in its short consideration of the Vestigial-Vision thematic.

help us better understand not only Lozano-Hemmer's work and our experience of it, but embodiment and interactive art more generally.

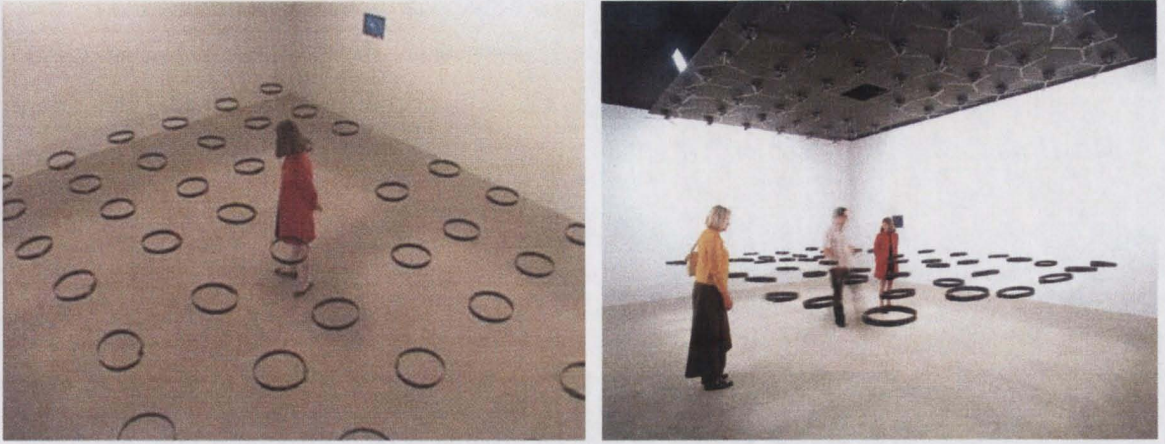
The Flesh-Space thematic was chosen for this study because of Lozano-Hemmer's ongoing concerns with space, architecture and environments, and how their inter-active enactment relates to embodiment. These interests are explored further in a later series of work that he calls 'subsculptures,' albeit on a much smaller scale than his relational architectures.

Lozano-Hemmer's *standards and double standards (subsculpture 3)* (2004, see Figure 16, page 97),¹⁰³ for example, installs "fifty fastened belts that are suspended at waist height from stepper motors on the ceiling of the exhibition room" (Lozano-Hemmer, Projects). When the space is empty of people, they slowly ripple back and forth in a circular fashion, appearing to be floating, would-be bodies that are scanning the room and looking for someone or something to focus on. These dynamic movements are "determined by a series of equations known as cellular automata, discrete dynamical systems whose behaviour is completely specified in terms of a local relation" (Perron).¹⁰⁴ When there are people in the space, however, these almost-absent forms are controlled by a digital video tracking system, so that "the belts rotate automatically to follow the public, turning their buckles slowly to face passers-by" (Lozano-Hemmer, Projects).

As the first body enters the empty space of *standards and double standards*, the belt they are closest to turns its buckle to face them. After several seconds, belts further from his or her position follow suit. This movement continues undulating outward, the participant "triggering a wave-like chain reaction and creating a force field" (Perron). As more people enter the installation "numerous force fields are generated and much like weather disturbances provoke unpredictable movement among the belts" (Perron). Each individual's presence "affects the entire group of belts, creating chaotic patterns of interference." Organic life-like behaviours begin to "emerge such as turbulence, eddies and relatively quiet regions" (Lozano-Hemmer, Projects).

¹⁰³ Video online at <http://www.lozano-hemmer.com/video/basel.html>

¹⁰⁴ Cellular automata is a simplified mathematical model of spatial interaction, where the 'state' – in this case, position – of each belt is co-determined both by its own activities/data, and its neighbours'. Cellular automata algorithms are relatively commonly used to show or portray emergent or organic behaviours, most famously in Conway's Life and Wolfram's 1D CA set. One is also used in the 'active trace' mode of Simon Penny's art work, *Traces*, critically examined in Section 5.4.



*Figure 16, standards and double standards, Rafael Lozano-Hemmer, 2004
Interactive and Kinetic Sculpture and installation, dimensions variable*

Lozano-Hemmer again plays with “notions of presence” (Perron) and absence in this piece, but instead of using large-scale shadows as in *Body Movies*, he gives visible and tangible life to many non-bodies, while also relating them to our own through their interactivity and installation at waist height. The sum of the contraptions is, Lozano-Hemmer asserts, an “absent crowd” any participant can walk around or through (Projects). He turns inanimate objects into animate forms, in a doubled gesture which performatively presents interactivity and embodiment as inextricably linked. In the first gesture, Lozano-Hemmer produces an absent body by giving movement and life to a belt; in the second, he makes a sea of absent bodies respond to our present ones (and we, of course, have our own embodied responses in kind).

Lozano-Hemmer has avowedly created an “unpredictable connective system,” one that can “visualize complex dynamics” (Lozano-Hemmer, Projects); but perhaps more notably, the system actually catalyzes such dynamics, in and of the relation between bodies, non-bodies, and space. Contrary to the other works thus far written about in this dissertation, *standards and double standards* is a very slow-moving interaction; its lightly swinging and creeping belts (“never losing sight of the symbolic association between the belt and paternal authority” (Perron)) can be perceived as either frivolous or ominous, and our navigation, and thus creation, of space is found in how we experience and inter-act with it.

Viewer-participants tip-toe carefully under and around its edges; they sway lightly back and forth in place, consciously and physically trying to elicit, while unconsciously and affectively mimicking, a response; they might run to a singular spot and then crouch and remain completely still, waiting to see how the piece will catch up, catch them. They

continuously engage with the inter-acting space they have just created / replied to / transformed. They become the cyclical and circular motion of a the belts, a creeping and dancing, a crawling and running, a hiding and seeking, an emergence of flesh (and space) as and *with* space (and flesh), in yet another complex interaction that intervenes in how we perform presence and absence, embodiment and disembodiment, and public and private space.

Lozano-Hemmer's 'subsculpture 7,' *homographies* (2006 see Figure 17, page 98), is another interactive installation that uses 144 "robotic fluorescent light fixtures controlled by 7 computerized surveillance systems" (Lozano-Hemmer, Projects). As visitors meander and explore under the installation, its glowing tubes of light rotate from the centre, in a circular and fan-like fashion, to "create labyrinthine patterns of light" (Lozano-Hemmer, Projects). The artist points out that the overall emerging shapes of these mobile structures are reminiscent of paths or corridors, spaces of passage that beg for participants to move between, as they simultaneously transform, them. Lozano-Hemmer says that *homographies*' 'vanishing point,' the point where its lines converge, is "not architectural, but rather connective" (Lozano-Hemmer, Projects). In other words, the space and how we see and interact with it is determined relationally, by who is there and where they stand or move at any given moment. It is thus a "reconfigurable light-space that is based on flow, on motion, on lines of sight" (Lozano-Hemmer, Projects).



Figure 17, *Homographies*, Rafael Lozano-Hemmer, 2006
Interactive Installation and Kinetic Sculpture, dimensions variable

homographies' 'light-space' not only shifts in relation to each individual person's presence and movement, but also to how many people are present and where they are in

relation to one another and the space.¹⁰⁵ According to the video documentation online,¹⁰⁶ the light fixtures respond to the presence of a single person as if they were producing a magnetic field of influence; when two or more people are detected, the system rotates its lighting so that "light corridors" are made between them; and as many people move in and around the space, the lights reflect the influence of all of them, creating complex patterns similar to isobars.¹⁰⁷ This is all occasionally interspersed with cellular automata algorithms that choreograph the lighting in a programmed sequence, in order to complexify and introduce a level of randomness and outside influence in our interactive experience.

In *homographies*, Lozano-Hemmer transforms not just the light but also the physical space of the room. It feels and moves with us, as we feel and move with it. The connective tissues between our bodies and their environment influence how we see, experience and move in, as well as change, the space around us; and the dynamic light structures pirouette to create new shapes, influencing the very movements that they are responding to as we try to choreograph their course. Performers might walk as they normally would through any passage, but with their necks craned upward to watch the rippling effects/affects of that walk; they sometimes, and again, mirror the piece's reactions, standing in one spot and pirouetting around like the fixtures above; they run around the circumference, to the corners, chase the lights and lighting, sometimes jumping up into, or leaping through, the air, in a futile attempt to catch the invisible space they feel themselves transforming. And they watch each other as they move, the movement of others that changes their own inter-actions, and vice versa, in an ever-transforming and dynamic flux of bodies and space.

All three of Lozano-Hemmer's rigs discussed here create a potentialized context, a situation, where body and space have unlimited possibilities in their relation (potentiality), rather than a mapped out quantity of configurations. Here flesh and space are amplified as embodied, interactive, and always implicated in one another. This examination of Rafael Lozano-Hemmer's work, enabled by the implicit body framework presented earlier in this chapter, moves away from the hegemony of the visual that, as discussed in Chapter 2, is overly dominant in contemporary interactive art criticism. It uses the implicit body approach put forward in Chapter 3, calling attention to performance and emergence

¹⁰⁵ All of which also means that this piece, and Lozano-Hemmer's work more generally, could benefit from being framed in the Social-Anatomies (Chapter 6) implicit body thematic as well as Flesh-Space.

¹⁰⁶ See <http://www.lozano-hemmer.com/video/homograpiesedit2.mov>

¹⁰⁷ In both meteorology and physics, isobars refer to lines or curves that map or represent pressurized systems.

in order to better understand interactive art and embodiment, together. And, as discussed in Sections 4.2 and 4.3, while it explicitly reads the relational 'with' of flesh and space in his art in order to further said understanding, it is also careful to interpret these as always already in relation to a multitude of other sensible concepts. Here the framework facilitates a concentration on inter-activity and a precise relation, while still allowing for openness across not only embodiment, but all the sensible concepts with which it emerges.

The remaining case studies in this dissertation aim to show more critical applications of the implicit body framework. Chapters 5 and 6, for example, look to well-known artists and art works within the field of digital art, and include the thinking behind several other implicit body thematics. As with Lozano-Hemmer, each artist is read through only one thematic, chosen based on his or her stated interests, in order to delve deeper into the relationship / sensible concept said thematic analyses. Although all the artists selected in the following two chapters use projections, headsets or VR environments – immersive, moving images – as part of their interactive installations, this conscious choice was made in order to show how a focus on interactivity and relationality, rather than only what we see, is precisely the strength of the implicit body approach and framework. It is a practical application for understanding interactive art through embodiment and embodiment through interactive art.

5 Body-Language

5.1 Introduction

This chapter discusses – as process, sensible concept and critical approach – the implicit body thematic of Body-Language, and applies it to studies of the work of Camille Utterback and Simon Penny. These interactive artists were chosen to examine with the Body-Language thematic because of their conceptual and practical interests in the emergence of language, meaning and discourse as they relate to our processual embodiment. The internationally acclaimed Utterback, for example, avowedly attempts to “bridge the conceptual and the corporeal” with her work (Statement). Although all of the work discussed in this chapter involves live video cameras and projected images as part of their realization, her main interest lies in how “we use our bodies to create abstract symbolic systems, and how these systems (language for example) have reverberations on our physical self” (Utterback, Statement).

Cutting edge technology plays a central role in how Utterback understands her practice. She explains that interactive media provide exploratory possibilities within the “connections between physical bodies and the myriad of representational systems possible in the digital realm” (Utterback, Statement). Like Rokeby and Tmeme, her interfaces often utilize computer vision technologies, more commonly known as interactive video. Here, the combined use of digital video cameras and custom computer software allows each artwork to ‘see,’ and respond to, bodies, colours and/or motion in the space of the museum or gallery. Utterback believes that such “physical-digital interfaces... provide the connective tissue between our bodies and the codes represented in our machines” (Statement). It is important, she argues, to get beyond the mouse, keyboard and screen, to “engage people’s bodies instead of just their fingers and eye” (Utterback, Statement). Utterback hopes to “refocus attention on the embodied self in an increasingly mediated culture” by creating a “visceral connection between the real and the virtual” (Statement). At their core, her art works ask participants to perform bodies and meaning.

Text Rain (1999, see Figure 18, page 103),¹⁰⁸ Utterback’s well-known and award-winning collaboration with Romy Achituv, is an interactive installation that invites viewers in front of a large screen to catch individually falling characters of text with their bodies (and by extension, anything they are attached to or holding). Participants between a plain

¹⁰⁸ Video: <http://www.camilleutterback.com/textrain.html>

white wall and video screen use “the familiar instrument of their bodies” in a mirrored black and white video projection overlaid with coloured and animated text (Utterback, SIGGRAPH). Here, each character will “‘land’ on anything darker than a certain threshold” within the live video frame, and “‘fall’ whenever that obstacle is removed” (Utterback, SIGGRAPH). “Like rain or snow, the text appears to land on participants’ heads and arms.” It can be “caught, lifted, and then let fall again” (Utterback, SIGGRAPH).

As the letters accumulate along a ridge of collaborating bodies, or on an up-close, outstretched and immobile arm, viewers may occasionally ‘catch’ a recognizable word or even an entire phrase. According to Nathan Blake, “Evan Zimroth’s 1993 poem *Talk, You* was selected for *Text Rain* due to its resonance with the structure of the piece” (Blake).¹⁰⁹ This poem, like the art work it inhabits, creates “metaphorical bridges between the physical and the linguistic” (Blake). While *Text Rain* invites bodies “moving through space to speak of interpersonal relationships,” *Talk, You* describes images to the same affect. The poem is an illustration of “how ‘meanings’ come together and fall apart through transient ‘syntactical’ spatial relationships” (Blake). When *Text Rain* is installed in international cities, the artists most often translate the poem into the language and alphabet of its host country (Hazan), so as to insure the possibility of word recognition. But reading the poem, “if participants can do so at all, becomes a physical as well as a cerebral endeavor” (Utterback, SIGGRAPH).

Utterback says that the tension between the “abstract realm of ideas and the corporeality in which we live and interact with these ideas” (Statement) is central to all of her work. In other words, it is not interactivity as a concept or arts practice that garners her interest, but how embodiment is itself interactive, and how we, as bodies, interact. *Text Rain*, for Utterback and as read through the implicit body framework, is not about interactivity, about language, or about the real and the virtual. Reading it in this way would (mis)understand the work exclusively through visual apprehension, where interactivity or language are approached as ‘things,’ and the body is merely ‘seen’ as a body-image. An implicit body approach rather encourages a closer look at the relational body-schema, at the specific inter-activities and what is performed through their relations. The framework undertakes analysing interactivity and embodiment together, as per-formed

¹⁰⁹ Also see *ASPECT: The Chronicle of New Media Art* (Utterback and Achituv).



Figure 18, Text Rain by Camille Utterback and Romy Achituv, 1999
Interactive Installation and Software, dimensions variable

event, and the Body-Language thematic couples the co-emergence of, as Utterback says, “the conceptual and the corporeal” (Statement).

As seen in Figure 18 (page 103), viewer-participants that engage with *Text Rain* most often attempt to gently catch words with their hands and arms, treating the language-drops as fragile treasures to be handled (and read) with care. They may sway their upper bodies back and forth, catching and pushing the alpha-numerals with their heads and shoulders; sometimes, these performers work together creatively, using picnic blankets to collect and read poetic phrases, or play out the metaphor further, with upturned umbrellas that both shield them from the onslaught of the Symbolic and simultaneously elicit and make legible that which was initially unreadable. At a New York exhibition in 1999,¹¹⁰ I once witnessed a crew of five participants wandering – seemingly aimlessly, at first – and laughing, mouths open, in and around the interaction area; they were all trying to catch letters on the tips of their tongues.

While the interactive experience of *Text Rain* “seems magical – to lift and play with falling letters that do not really exist” (Utterback, SIGGRAPH) – so, one might argue, does the indoctrination into language itself. Whether a child is learning to communicate for the first time, a traveller is slowly beginning to understand a new, foreign language, or a graduate student finally manages to internalize a difficult to understand concept (for the sake of this particular argument, let’s say Lacan’s *Mirror Stage*¹¹¹), each situation revolves around a self-referential, undeniably fragile, perpetually challenging and extremely gratifying – and corporeal – relationship to abstraction. We test and play with words and meaning, see how they form in our mouths, roll off our tongues, ‘flow’ on the page, in our ears and in space, in order find the right ones, and ourselves, within them. In *Text Rain*, “it is our intuitive mental manipulation of language that is frustrated” (Utterback and Achituv, *Minima*). “We manipulate the abstract symbolic space of language both physically - with our mouths and hands, and mentally – with our thoughts” (Utterback and Achituv, *Minima*). Body and Language share the same plane of existence.

Utterback and Achituv ask us to physically and mentally weave in and around our simultaneously incorporating and inscribing relations to language and text. We catch and

¹¹⁰ At the Interactive Telecommunication Program, New York University

¹¹¹ See Jacques Lacan’s 1936 paper “The Mirror Stage as Formative of the Function of the I as Revealed in Psychoanalytic Experience” in a number of collections and translations.

toss continuously moving meanings that may contrapuntally be read as actually trying to capture us. Whether standing still, dodging the droplets, or actively collaborating with other reader-participants, *Text Rain* puts our incipient feedback loops between the conceptual and corporeal in quotes: "Body-Language." It re-cites and re-situates how bodies and language/meaning/discourse co-emerge from their ongoing and interactive relation.

Utterback's work is exemplary in its amplification of the interactive and relational 'being-with' of flesh and discourse. Section 5.2 follows this introduction by refining a Body-Language thematic to approach such work, through a parallel to Jean-Luc Nancy's concept of exscription: the relation between the performance of embodiment and the process of meaning-making. Body-Language was chosen as a key implicit body thematic for this dissertation exactly because of how it might at first seem to resemble explicit body art, given that both kinds of work address bodies and signification; this is not the case.¹¹² Section 5.2 will thus also use exscription and inscription to highlight the difference between the two. Sections 5.3 and 5.4 will visit more work by Camille Utterback and introduce the art of Simon Penny, respectively. Here the implicit body framework is deployed to highlight how these artists intervene in the relation between the co-emergence of body and language. Utterback and Penny have been selected for study both because of their stated interests in corporeality and semiotics, and because of their recognized and high status in the field of digital art. Utterback came to prominence in the early 2000s, primarily engaged in the prevalent discourses of digital art – exhibiting at venues such as Art Interactive, Transmediale and Ars Electronica, while Penny is a more long-standing, international and consistent force behind digital technologies in the arts – from well before the term 'digital art' was even in use; since the mid-eighties, he has been and continues to be a pioneering artist, writer and academic in the research areas of interactivity, robotics and virtual reality, media culture, embodiment and interdisciplinarity.

5.2 Exscription

Like Jean-Luc Nancy's philosophical approach to being, the 'being-with' discussed in Section 4.3, exscription is a nuanced approach to understanding the co-emergence of bodies and/with meaning. It is Jean-Luc Nancy's purposefully tautological

¹¹² Explicit body art interrogates inscription and its signifiers; implicit body art works, through this thematic, are understood to intervene in an embodied exscription and the process of signification itself. Section 5.2 will unpack this further; see Section 3.4 for more on the explicit body in performance.

understanding of how bodies and meaning make one another, through their making of one another. Like a topological figure, exscription is relational and self-referential, and can thus be best understood through the lens of exscription itself. This section will attempt to unpack the concept and realities of exscription by several means, in order most efficiently ask for an engagement with how bodies and meaning are co-constituted through their continuous inter-activities. “For Nancy,” as for this dissertation, “bodies make the world go round” (Perpich 78-79). But Nancy, like Marilyn Strathern,¹¹³ doesn’t presuppose *what* a body is, only *that* it is – and it is, only when it is in and of and making the world.

Nancy’s body is “not of essence or substance” (Ridgway, *Between* 335). It is

neither fullness nor void, neither outside nor inside, neither part nor whole, neither function nor finality. It is... “folded, refolded, unfolded, multiplied... evading, invading, stretched, relaxed, excited, shattered, linked, unlinked.”... it is “a whole corpus of images stretched from body to body: colors, local shadows, fragments, grains, areolas, half-moons, fingernails, body hair, tendons, skulls, ribs, pelvis, stomachs, meatuses, froths, tears, teeth, foams, clefts, blocks, tongues, sweats, liquids, veins, pains, and joys, and me, and you”. (Nancy, *Corpus* 16, 104-105 qtd. in; Perpich 85)

In other words, Nancy’s understanding of body (*le corps*) is not in fact a body but bodies (*corpus*), folded and unfolded with other bodies, images, discourses.

As with the complex being-with of community and people, Nancy here sets out to write an embodied discourse that is also ‘not a discourse,’ in that it explores the interrelationship of body and discourse, body with discourse, discourse with body. Nancy’s corpus “consists of a constant working and reworking of the conditions of thinking itself” (Ridgway, *Between* 331); it is an “implacable deconstruction of modern philosophies of the body proper and the ‘flesh’” (Derrida, *On Touching* 63). Here, bodies as we understand them co-emerge with world and meaning.

Key to Nancy’s approach is an effort to “eschew both the tendency to arrest the affect, plurality and difference of the body, as well as the tendency to reinstate the body as something un-representable” (Ridgway, *Between* 334-335). His body is not inherently “opposed to speech and language... to thought and rationality” (Ridgway, *Between* 334-

¹¹³ See Section 3.1

335). On the one hand, Nancy argues that “discourse can represent or signify the body, that is, write *of* or *about* the body,” but it cannot “*write the body*” (Perpich 84). On the other, he reminds us that one cannot write *without* a body, that the body haunts all writing, language and signification, and must therefore be present in, and a co-condition for, every inscription. In other words, while we may not be able to produce any successful language or discourse that is ‘embodied’ as bodies are, we also *fail to produce any discourse without the body already in it*.¹¹⁴ Both language and bodies are implicit in every-thing, every constitution, every action, every communication, every meaning and every text: corpus.

In her paper on Nancy and “dis-integrating bodies,” Diane Perpich argues that in “the Western philosophical tradition, the body has been construed in opposition to speech and language: it is ineffable, passive, impenetrable, unintelligent, and as such opposed to the intelligible articulations of discourse” (84). So, according to this tradition (or at least to a dominant movement within it) bodies and discourse “would seem to be antipodal and mutually exclusive,” with bodies “belonging to matter,” and discourse “to mind and experience” (Perpich 84).¹¹⁵ “How then,” she asks, “can the body or bodies be accessed by language?” (Perpich 84) How can the putatively incorporeal (language, meaning, text) “touch” the corporeal (bodies, matter, things)?

Nancy suggests that how bodies are accessed by language (and writing), that this touching of corporeal and incorporeal, is not *inscribed* in language (and writing), but rather *exscribed* outside of it. Bodies and meanings co-emerge ‘outside’ of, and with, each other; they touch implicitly, in- and unfolding as relational. Nancy asserts then that the act of writing, for example, “exscribes meaning every bit as much as it inscribes significations. It exscribes meaning or, in other words, it shows that what matters... is outside the text, takes place outside writing” (Birth 338 qtd. in; Perpich 84).

Here outside and inside are not to be understood as oppositional. Rather, in the bodily and relational thinking that Nancy proffers, inscription and exscription, outside and inside, bodies and discourse/writing, happen together; they are not opposed, they are-

¹¹⁴ This is paraphrased from Nancy’s reminder that we are always faced with a double failure: “a failure to produce a discourse on the body, also the failure not to produce discourse on it” (Freedom, 180)

¹¹⁵ Perpich refers to Western philosophical traditions going back to Descartes. Other strains might include, for example, Merleau-Ponty’s phenomenology in *The Phenomenology of Perception*, Tom Cohen’s “non-representational” materiality in *Ideology and Inscription: Cultural Studies after Benjamin, de Man and Bakhtin* (8, 41) or Judith Butler’s *Bodies that Matter*.

with. This 'with' that is the pre-condition for all things is "neither substance, nor phenomenon, nor flesh, nor signification. But *being-exscribed* [l'e tre-excrit]" (Perpich 84). "While signification is located meaning, [exscription] resides only in the coming of a possible signification" (Ridgway, *Between* 331). In being exscribed, the "body comes to sense, it is not only an effect of signification" (Ridgway, *Between* 336).¹¹⁶ When Nancy says that bodies and meanings take place 'outside', he means that they "take place neither in discourse nor in matter. They inhabit neither 'spirit' nor 'body'. They take place at the limit, as *the limit*" (Nancy, *Corpus* 18, 20, qtd. in; Perpich 84). Here, "bodies are meaning ... they are the limit and expression of meaning" (Ridgway, *Between* 335). Every-thing is defined by being outside another outside another outside.¹¹⁷

Nancy thinks corpus and bodies (and discourse) as

the spacing between, the border or line of separation that allows beings to appear as distinct from one another but that equally serves as the point of their connection and contiguous existence. Bodies, for Nancy, do not *have* limits, they *are* limits; and further, the general law of intrusion might be adapted here to apply to this notion of limit: there is never only one. Every body *is* multiple limits; every body divides and relates to itself and to others along multiple borders. (Perpich 85)

Here embodiment and meaning emerge through their relational margins of contact, the various borders and limits they engage with.

Interactive art, this section and dissertation argue, asks us to play at these limits, engages with and intervenes in a processual embodiment as and at these limits. The implicit body thematic of *Body-Language* more specifically puts the relational activities of "enfleshment with signification" in quotes, asking us to examine interventions in the corporeal and incorporeal. This thematic is an approach to analysing how bodies (and meaning) are continuously reconfigured, re-cited and re-situated; they are per-formed, they are "first to be touched. Bodies are first masses, masses offered without anything to articulate, without anything to discourse about ... discharges of writing rather than surfaces to be covered in writings" (Nancy, *Corpus* 197 qtd. in; Derrida, *On Touching*

¹¹⁶ Nancy's understanding of 'sense' will be explained further in Section 5.3.

¹¹⁷ This sentence is paraphrased from an uncredited Nancy citation in Derrida's book on Nancy. He elaborates: "the being outside an other outside forms the fold of a becoming inside of the first outside, and so forth.... Hence, by reason of this folding, here are the interiority-effects of a structure made up of nothing but surfaces and outsides without insides" (*On Touching* 14).

204). These are not 'written bodies' not bodies on which writing takes place, nor bodies that are signs of themselves. "For indeed," as Nancy himself asserts, "the body is not a locus of writing ... it is always what writing exscribes. In all writing a body is traced, is the tracing and the trace – is the letter, yet never the letter ... a body is what cannot be read in writing" (Nancy, *Corpus* 197 qtd. in; Derrida, *On Touching* 204). It is a body only in the touching of, in being touched by, the Other (whether Other refers to body, signification, meaning or writing). And this touching is always already "syncopated – interrupted – or exscribed" (Ridgway, *Between* 336).

In touching and being touched (in interacting) we encounter the limit, or what cultural studies scholar Zsuzsa Baross describes as the "in-between par excellence" (Baross 440 qtd. in; N. Sullivan 7). Since "to touch" is always "shared in-between," "touch is always already reciprocal..." (Baross 440 qtd. in; N. Sullivan 7). Accept these claims made by Derrida and Baross that the 'self' "comes into being only in and through the sensuous relation with the other, in and through exposure to the limit, to that which is not self (but is nevertheless internal to it)," and we can see how touch, and by extension the body, is not simply an object of the self's perceiving consciousness (or an expression of its affective interiority), but is also a body in and through exscription (N. Sullivan 7). The Body-Language thematic invites examination of how interactive art works ask us to touch, to encounter the in-between, and, as such, are interventions in the movements between meaning and body as 'with'.

"Here, meaning (and/or bodies) are never monolithic, they are not a priori or intermediate. Rather meaning (and/or bodies) is of the relation" (Ridgway, *Between* 335). Nancy's *corpus* finds meaning and bodies and being together, as relational and interactive. He asserts, "There is no meaning if meaning is not shared, and not because there would be an ultimate or first signification that all beings have in common, but because meaning is itself the sharing of Being" (Nancy, *BSP* 2). We must remember: being *is* being-with, it is *partagé* or shared,¹¹⁸ and here that being is shared with meaning; it is exscribed.

And therein also lies the fundamental difference between the explicit body in performance, and the implicit body as performance. The explicit body approach presupposes body and sign: the latter inscribes the former – with race or gender or class, for example – and an explicit art work challenges those signs. An implicit body approach –

¹¹⁸ See Section 4.3 for more on Nancy's concept of *partagé*.

and, by extension, the Body-Language thematic – presupposes no-thing. It is part of a self-critical corpus, exploring relations between the co-original processes of embodiment and signification.

The Body-Language thematic focuses on interventions in the continuous interaction between body and sign – the activity of *writing-with-the-body*. The art works discussed in this chapter solicit such embodied writing as “traced,” as “the tracing and the trace”, inviting us to per-form and interrogate bodies with discourse (Nancy, *Corpus* 197 qtd. in; Derrida, *On Touching* 204). This work asks us to exscribe meaning, provoking us to enact, challenge and examine “embodiment plus signification” as co-original passage, not position.

5.3 *Camille Utterback*

Camille Utterback’s work “in both traditional and digital media” attempts “to draw attention to the connections between human bodies and the symbolic systems our bodies engage with” (Utterback, *Unusual Positions*). She claims an interest in the digital medium because “it is a perfect site to explore the interface between physical bodies and various representational systems, be they language, the linear perspective used in three-dimensional rendering, or the various forms of computer code itself”(Utterback, *Unusual Positions*). Utterback avers, “Interfaces, by providing the connective tissue between our bodies and the codes represented in our machines, necessarily engage them both. How and to what extent new interfaces may engage the body, however, is up for grabs” (Utterback, *Unusual Positions*). This is where the implicit body framework can be deployed to shed some light.

In Utterback’s short essay entitled “Unusual Positions - Embodied Interaction with Symbolic Spaces,”¹¹⁹ she allies herself with an interventionist approach to movement and continuity by describing her goals of engaging and challenging the live relations between flesh and sign. It is worth citing her at length:

Practical interfaces are about maintaining the user’s sense of control. In this scenario representations on screen must respond to the user in a logical and predictable way. Artists [on the other hand] can explore other possibilities. [My] interactive works... incorporate poetic rather than

¹¹⁹ This text was accessed online at (Utterback, *Unusual Positions*), but was originally scripted for *The New Media Reader* (Wardrip-Fruin and Montfort).

practical interfaces to text or spoken language. In these text-based pieces, the characters function as legible signs, but also take on their own behaviors and responses to the user. These behaviors do not fit the normal obedient role of digital text that is cut, pasted, and clicked. These characters draw attention to themselves through their 'misbehavior' as they become active objects, or overstep their bounds in other ingenious ways. Conversely, the pieces that provide unusual interfaces to spoken language question the line between bodies and language by physically putting the user in an unusual 'position' with regards to the words. In each case the relationship between the symbolic and the physical is simultaneously thrown into relief and muddled. (Utterback, Unusual Positions)

In a later text, Utterback revisits the question of the interface and asserts that our interactions with machines are never neutral. "What is at stake," she asserts, is everything from the format of the "new media through which we will read and imagine, to how we will explore the limits and reaches of our physical bodies, to how our information about our bodies will be captured and represented given new technologies" (Utterback, Response). These "boundary negotiations" between our "physical," corporeal selves and our "symbolic," meaning-based selves are not, she reminds us, new to our "human condition"; but they do need to be understood in the uniqueness of this technological moment. Utterback's artistic practice seeks to focus "attention on the embodied self in an increasingly mediated culture" and to "create social spaces focusing on human interactions" in which "unusual" performances (arising from unusual movement and affect in the interactive arena) draw us to the limit of body and language, and as the limit of body and language. Here signification and embodiment are exscribed, body and/with language is per-formed.

Following *Text Rain*,¹²⁰ Utterback embarked on several series which intervene in not only the co-emergent relation of embodiment and meaning-making, but in that of body and time, body and vision, body and history, and perhaps many other sensible concept couplings. This section utilizes just one thematic, Body-Language, to frame and examine her interactive environments as rigs which encourage and amplify the per-formance of embodiment with the process of signification, discourse, meaning-making. This thematic was specifically chosen based on the trajectories of her own avowed interests, and in line

¹²⁰ See Section 5.1

with the implicit body approach at large, the section aims to analyse her work in a way that helps us better understand interactive art, embodiment, and a continuous relation between the two. The following discussion will unpack her *Liquid Time Series* (2001 – 2002), which uses viewer interaction to reveal pre-recorded segments of video images (re-presenting time), and pieces from her *External Measures* series (2001 – present), which create generative and painterly impressions from participants' movements in a gallery or public space.

Utterback writes eloquently about her own work:

The *Liquid Time Series* explores how the concept of 'point of view' is predicated on embodied existence. Initially, the piece was an attempt to create an interactive installation where users' physical positions in the gallery (tracked by an overhead camera) controlled different 'perspectives' in a collage-like projection. The result of this exploration, however, is a series of pieces in which imagery of time, as well as space, is disrupted by users' motions. (Utterback, *Liquid Time*)

In *Liquid Time*, the participants' physical motion literally fragments a pre-recorded video clip. Utilizing a coded technique visually similar to slit scan,¹²¹ this video is broken into very thin slices, and these video strips are each on their own timeline. In other words, rather than playing a large singular video clip of 720 x 480 resolution (standard NTSC), she has broken her video down into 720 individual videos that are each 1 pixel wide and 480 pixels high; and rather playing these forward at an approximate rate of 30 frames per second, each is controlled individually, by the participants in the installation.¹²² An overhead camera captures real-time video of the space directly in front of Utterback's projection screen, and her computer vision software tracks their position and movements. The slices that are directly in front of them – the 1 pixel wide video strips they face and which take up the same width of their bodies at any given moment – will move forward and backward in time as they move towards or away from the screen. Says the artist, "Beautiful and startling disruptions are created as people move through the installation space. As viewers move away, the fragmented image heals in their wake—like a pond returning to stillness" (Utterback, *Liquid Time*). Here Utterback literally unfurls and infolds

¹²¹ See footnote 227, page 226, for more on slit scan technology in art.

¹²² The exact resolution and speed of Utterback's video is unpublished. For the sake of clarity and brevity, here I adopt America's NTSC standard of 720 x 480 pixels and 29.97 frames per second, and a width of 1 pixel for her fragments. It is possible that Utterback used different sizes and framerates to optimize her software and screen.

time and space through our embodied relationship to the signs and media she presents, to the language of video and the screen.

The sequenced images shown here (see Figure 19, page 114) admittedly do not do justice to what we see or experience in *Liquid Time*; the fluid unravelling and reconstitution, the viscous un- and enfolding of time in-and-around-and-as space rippling through the installation area, must be experienced in person and in body. Since every video slice explores its own spatiality and temporality as a viewer-participant crosses through its thresholded section and moves and leans forward or back in time, the projection itself shimmers and flows from his or her inter-activities. It then freezes its space-time slices with rough edges and jagged pixilation as one falls static or moves away from a given section of the screen. For those readers with internet access, I must highly encourage, at minimum, viewing Utterback's video documentation on her web site, to at least get a sense of the visual aesthetic the two *Liquid Time* pieces accomplish.¹²³

In both pieces in the series – *Liquid Time Series-Tokyo* (2001) and *Liquid Time Series-New York* (2002) – participants interact with images “from sites in these cities where humans, data, or other physical matter are transferred or in transit” (Utterback, *Liquid Time*). In other words, the original “source” videos that Utterback has cut up contain scenes that might be of a busy street in Tokyo, full of various foot traffic that is under umbrellas trying to escape the rain; or it may show crowds waiting for a slowly stopping subway train, underground in New York City. “Participants' movement back and forth in front of the screen both echoes and controls the movements” of the people and objects on screen (Utterback, *Liquid Time*). Pedestrians may walk with the viewers in the gallery space, umbrellas twirl, subway cars come to life – but each only in fragmented slices, one at a time. The chaos and fragmentation in each section is anchored by “static elements” such as “street signs, trash cans, a person standing oddly still” in the original video (Utterback, *Liquid Time*).

As the images in Figure 19 suggest, viewer-performers engage in an active embodied exploration of *Liquid Time*. Utterback explains that in her work, they first “‘test’ the correspondence by moving parts of their body – tilting their head, waving their arms, etc,” and once they understand how a given interaction works, they “‘play’ with manipulating their transformed symbolic ‘self’ using their physical body” (Unusual Positions). *Liquid Time* participants often mimic the screen's water-like spurts of sliced

¹²³ See video link from <http://www.camilleutterback.com/liquidtime.html>



*Figure 19, Liquid Time Series by Camille Utterback, 2001-2002
Interactive Installation and Software, dimensions variable*

and rippling movement, pushing and pulling the moments and slits of time, leaning their heads and torsos and bodies toward the screen or camera to slow an instant, or using fluid but frenetically reaching arms to grow an uncannily familiar street scene. Our moving bodies in front of Utterback's responsive screens perform what might look like novice moonwalking or break-dancing techniques, stringing together a series of ludic gestures that feel, literally *feel*, like trying to find sense in the relations between sign (albeit signifying representations of time, through video media) and flesh.

While there are many emergent relations that could be examined in Utterback's work, the thematic of Body-Language invites a focus on the symbol(s) of/in/with embodiment which are amplified in her creations. This thematic fits well with the artist's performative intrigue – legible in her stated interests, as well as in her consistent use of recognizable media on screen (text or otherwise) – which sits squarely between human interaction and real-time significations. In *Liquid Time*, for example, we scrub back and forth in a symbolic, 3-dimensional space-timeline that is immersed in, and physically representative of, the language of film. Utterback makes use of digital abstraction and human interaction to invite “boundary negotiations” at the “limits” of body and meaning (Utterback, Response). Says the artist about her work generally,

By distancing this connection through the abstracting of the live image into letters [or snippets of time/video, or paint], viewers become more aware of the discrepancy between the abstraction and their bodies.... this abstraction is simultaneously "them" and "not them."... [It] "stands in" for them, and on some level "stands for" them...(Utterback, Unusual Positions)

Here Utterback says that the work allows us to see how abstraction “stands for” our materiality i.e. that it is, in Peter Anders' sense, a metaphor (a bridge between our “abstract thought” – as represented in the video image – and our “worldly experience” – our embodied actuality).

As Anders argues in his paper on cyberspace, metaphor is best understood through its Greek etymological roots, as the action “to carry over.” Metaphor, he asserts, “ferries meaning back and forth between materiality and abstraction” (Anders 413).¹²⁴

¹²⁴ Anders' paper in the Leonardo journal, “Anthropic Cyberspace: Defining Electronic Space from First Principles,” foreshadowed some of the questions now being raised by Second Life artists as well as networked installations and performances like those of Stelarc and Furtherfield,

While the *Liquid Time Series* certainly could be read as drawing attention to that relationship through what it images, such a critique cultivates the separation of body and language that Nancy and this dissertation and thematic – among others discussed in Chapters 2 and 3 – are trying to circumvent. In *Liquid Time's* interactive instantiation, and as the implicit body approach shows, body and discourse, materiality and abstraction, emerge together through their performance and relation.

This section argues that Utterback's interactive experience is, rather, a kind of syncopated touch: the rhythm of our emerging bodies and the performing video slices play at one another, interact and relate through a touching of the conceptual and corporeal. The piece does not act as a metaphor for embodiment (or us / our bodies), but rather asks us to perform both bodies and meaning, which are always already implicated in one another. In *Liquid Time*, we explore and operate a video image, find meaning through the touching of an (inside) embodied exploration with/in a fragmented (and outside) other. Utterback's participants "come to sense," embody meaning and image and language, through a performative and interactive exploration of what is on screen. Here, inside and outside, flesh and meaning, body and language, are exscribed.

The interactive and co-emergent relation of embodiment and meaning-making – exscription – is also worthy of analysis in Utterback's ongoing *External Measures Series*. In this series of interactive installations, she uses body-tracking software to trigger painterly and animated marks on screen that collectively create, in her words, "kinetic sculptures" or "living paintings" (Utterback, EM01). These marks look and move like actively reconfiguring geometric patterns, smudging pencil sketches, dripping paint or seeping moulding clay depending on the piece in the series. Their position and velocity within the projected image are initiated and continuously informed by the location and movements of the participants in space. Although the overhead computer vision system that Utterback employs in this series is similar to that of *Liquid Time*, her "dynamic drawings" (Utterback, EM01) have a completely different aesthetic feel; they are birthed, move, affect and are affected by our gestures and stillness in somewhat predictable but very organic ways (and thus elicit very different interactions).

respectively. For interesting contemporary Second Life art and performance, see Scott Kildall (any works by Kildall in the works cited section) and Second Front (Turner, et al) both discussed briefly in Chapter 8. For more on Stelarc, see Section 2.8. And to read more about Furtherfield's internationally collaborative, networked performances that incorporate their web-based *VisitorsStudio* software, see <http://blog.visitorsstudio.org>.

Utterback's marks immediately appear in response to participants' presence, and they are animated – often leaving trails of what looks like graphite or paint or clay – based on the flow of people in the installation area. An overall image emerges and continues to transform over time based on the layering of these persistent marks (and bodies). The complexity of the overall composition (and the appearance of certain graphic elements) is dependent on how many people are in, and how they move and interact and relate throughout, the space. The artist says that the works seek to foster a feedback loop

as viewers choreograph their motions – first to explore the composition, then to direct it to their liking. The piece measures viewers' motions and creates an external visualization of them. Viewers in turn monitor this external data and measure out their actions in response to it. An intricate dance between computer algorithm and human gesture emerges.
(Utterback, EM01)

In other words, “measures” in Utterback's sense of the word does not refer to measurement, but rather to a kind of active “measuring up”; it is a play on the feedback between the thinking and making of the screen-image – and its ongoing signification – with our per-formed bodies. Her use of the word “external” is also an ironic pun. The interactive co-emergence of embodiment and the work's abstract projection (as well as its meaning) is a continuous, topological, internal and external “measuring”; body and language are, as this section argues, exscribed.

The first piece in Utterback's series, *External Measures (Rectangle)*, creates a collection of angular shapes that fold in on themselves based on viewers' locations and movements over time. It was produced, released and exhibited along with the second work, *External Measures (Round)*, a circular projection where “lines curve and snap between people like crazy elastic bands, creating a dynamic tension” in the image and space (Utterback, EM01) (see Figure 20, page 118).¹²⁵

¹²⁵ Video of these works available online at <http://camilleutterback.com/externalmeasures.html>

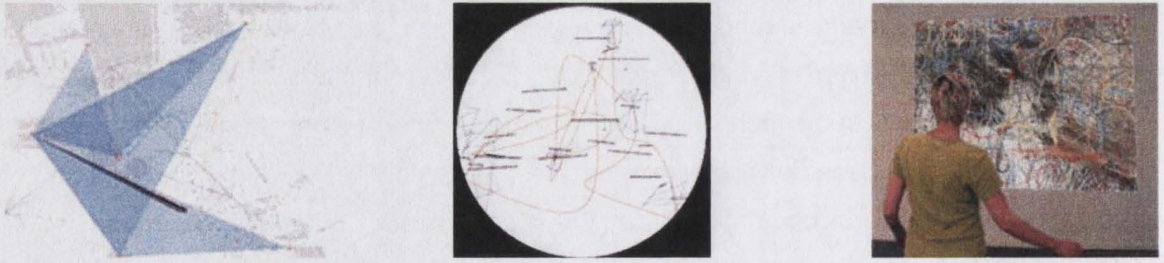


Figure 20, *External Measures: Round, Rectangle and 2003, respectively, by Camille Utterback, 2002-2003*
Interactive Installations and Software packages, dimensions variable

Utterback's third *External Measures*, *2003*, saw a slightly more organic relationship between embodiment and image creation (Figure 20, above).¹²⁶ Here constant procedural animations of "meandering gray lines" are pushed aside by viewers' bodies in space, and their moving flesh also spreads its own saturated colours and lines "throughout the composition" (Utterback, EM03). Our movements and our spatial relationship to others generate new images and new meaning. "Subtle brown and black swaths are etched between any people in the space" and "scratchy white lines connect" each of us to our point of entry into the interactive area (Utterback, EM03). A given participant's mere presence alters the traces on the screen and, at times, erases the marks left behind by others. The work "tempts viewers to influence its composition, but ultimately reabsorbs all traces of their presence" (Utterback, EM03). Its "meandering gray lines" that at first seem to link the dynamic compositions to each body's presence and motion eventually invert that relationship, creeping "back through the composition, erasing viewer's marks" (Utterback, EM03). Fleeting traces of presence are momentarily captured before they are lost in "a tangle of impersonal gray lines" (Utterback, EM03).

External Measures, 2003 creates a "hypnotic tension between presence and absence, mark-making and erasing, human gesture and algorithmic drawing" (Utterback, EM03). Here, we literally write with our bodies, are explicitly the "tracing and the trace" in an emergent writing and embodiment, drawing and meaning-making, inscription and exscription.

In Utterback's award-winning *Untitled 5* (2004, see Figure 21, page 120),¹²⁷ the next in her *External Measures Series*, visual feedback between body and screen influence one another immediately *and* over time. Here the artist's goal was to "create an aesthetic system which responds fluidly and intriguingly to physical movement in the exhibit space"

¹²⁶ Video of *External Measures 2003* online at <http://camilleutterback.com/externalmeasures2003.html>

¹²⁷ Video of *Untitled 5* online at <http://www.camilleutterback.com/untitled5.html>

(Utterback, *Untitled 5*). Utterback uses the same system of overhead body-tracking from her previous works, but introduces algorithmic complexities in her pixel painting that are not only affected by moving bodies, but still bodies, multiple bodies, and compositions of performing bodies that interact over time, to create a hauntingly and haltingly poetic moving image. It both traces and directs our bodies, inviting participants to make and find meaning in, with and as an embodied, interactive and relational corpus.

Untitled 5 complexly layers space, line and colour to create an evocative composition in which participants' movements generate animated marks that cumulatively interact with each other over time. As Utterback lucidly describes it,

As a person moves through the space, a colored line maps his or her trajectory across the projection. When a person leaves the installation, their trajectory line is transformed by an overlay of tiny organic marks. These marks can now be pushed from their location by other people's movement in the space. Displaced trajectory marks attempt to return to their original location, creating smears and streaks of color as they move. The resulting swaths of color occur at the intersections between current and previous motion in the space, elegantly connecting different moments of time. This is just one of the behavioral elements of the composition.

The behaviours behind *Untitled 5* are never explicitly revealed to the participants, and while certain aspects of the system can be discovered through "kinesthetic exploration" (Utterback, *Untitled 5*), the embodied sense of 'more,' of a relation to the outside, is always prevalent. For Utterback, a "visceral sense of unfolding or revelation," of both "immediacy and loss" is integral to the work itself. Like the "experience of embodied existence itself - a continual flow of unique and fleeting moments" – *Untitled 5* is both sensual and contemplative in its interactivity.

With *Untitled 6* (2005, again see Figure 21),¹²⁸ a work very similar to its predecessor, Utterback carries on with this interactive methodology, but aesthetically shifts to bold graphics that are much closer to a Minimalist aesthetic. And with *Abundance* (2007, see Figure 22, below), she explores public space and social relationships – topics often explored in installation art of the 60s through today – by moving her visuals onto the

¹²⁸ Video of *Untitled 6* available online at <http://www.camilleutterback.com/untitled6.html>



Figure 21, Untitled 5 (first seven images) and Untitled 6 (last seven images)
 centre image is a documentation screenshot of tracking and drawing software
 by Camille Utterback, 2005
 Interactive Installations and Software packages, dimensions variable

facade of a 3-story building in San Jose, and viewer interactions onto the adjacent public square.¹²⁹

Each *External Measures* work – indeed, every time any individual interacts with the variable traces of other/past participants on screen, in *any given* piece – elicits slightly different physical responses, accents multiple relationships with her art work, and with art- and mark-making more generally. Where one *Untitled 5* viewer may utilize stillness in order to leave large splotches that later agents may or may not erode over time, another can run and drag illustrative trajectories across an empty field, or slowly concentrate their gestures so as to smudge a crowded canvas. The interactive experience can be care-ful or care-free, and any performance might produce subjectively stunning images or visual garbage – similar to a professional artist's practice in the studio.



Figure 22, *Abundance* by Camille Utterback, 2007
Interactive Installation, Architecture and Software, dimensions variable

The live relationships and generative algorithms in Utterback's *External Measures Series* become more and more complex as she works with her media over time. Intentionally or not, they also begin to collectively en- and unfold our historical relationships to art and mark-making more generally; Utterback's inquiry across the individual art works parallel historical movements and communal understandings of 'the work of art' more broadly. She began with simple shapes and immediate on-screen responses that might allude to early cave paintings or mathematical drawings (*Rectangle* and *Round*); she then moved on to the use of negative space and real-time animated images, reminiscent of both landscape painting and early motion graphics (2003); and in *Untitled 5* she again pushes forward on this historical arts trajectory, referencing the affective and performative – and in this case, collaborative – possibilities of Abstract Expressionism a la Jackson Pollack.

¹²⁹ Video of *Abundance* available online at <http://camilleutterback.com/abundance.html>

Viewers' operational movements in Utterback's *External Measures Series* are a playful reminder of, allusion to, and interaction with, the literal, historical 'art movements' of the past; the 'language' of this work is that of "art" itself. Participants are invited to physically relate to the images and trajectories of preceding artists/interactors, creating a live collage of intertextual and intersubjective expressions and explorations. They construct and assemble 4-dimensional re-presentations of "embodiment plus art" on a 2-dimensional plane, and continuously feed back in to that image and process. The variable aesthetics and interactions that emerge conjure up memories and re-member-ings of not just Abstract Expressionism's embodied splashes of paint or, in *Untitled 6*, Minimalism's solid forms, but Art Nouveau's graphic arts, Collage and Assemblage's found objects and pasted fragments in abstract composition, the technologically inspired Constructivists and Futurists, Cubism's goals of incorporating several perspectives and/or times, and the absurdity of Dada or subconscious revealings of Surrealism, to name just a few.¹³⁰

In *The Ground of the Image*, Jean-Luc Nancy suggests that the "re- of the word representation is not repetitive but intensive... mental or intellectual representation is not foremost a copy of the thing but is rather the presentation of the object to the subject (to say this otherwise: it involves the constitution of the object as such) ... [it is] a presence that is presented" (Ground 36 qtd. in; Ridgway, *Between*).¹³¹

For Nancy then, presentation without its "re" in, for example, art, designates the coming into presence of a presence – a presence which is neither representable nor un-representable, but presentation/sense before signification. While signification is located meaning, sense resides only in the coming of a possible signification. "Sense" in this sense gestures, roughly speaking, to Nancy's assumption that being is nowhere other than in its articulations, but that its articulations are not representations classically understood. Sense, Nancy avers, is 'neither a word nor a concept'¹³² as it is beyond all appropriation and before all significations; sense articulates difference, the fracturing and fraying of

¹³⁰ Although these are fairly reductive art movement explanations, they are still correct, and serve the larger point.

¹³¹ New media arts pioneer Simon Penny (see next section) also explores the meaning of the word: "Representation' has rich and varied meanings in the visual arts, in literary and cultural studies, and in computer science and related disciplines, as well as in politics and elsewhere. This cloud of meanings is enormously rich in disjunctions and discontinuities. Its elucidation is in itself a fascinating study, and one which is fundamental in the establishment of a common language for the new aesthetics" (Penny, *Representation*).

¹³² See *The Ground of the Image* (Nancy 75).

the relation of the present to its presence, of the immediate to the mediate. (Ridgway, *Between*)

By interacting with Utterback's *External Measures*, I am arguing, we 'make sense' in our embodied and intensified re-presentations of her immediate, on-screen imagery. By extension, we are asked to relate to the history of signification and meaning-making in the work of art more generally. In this relationship, in the sensation of making sense of, and mediating, the language of art and/with the embodiment of images, we, and the work of art, become present.

In *External Measures*, the inscribing practices of writing, drawing, painting and making art are highlighted as simultaneously exscribing, per-formed and embodied practices. We are invited to re-member that signs, images and the discourses that surround them are not mere representations, but re-presentations. As the implicit body approach and Body-Language thematic teach us, making meaning always requires bodies, and embodiment always requires meaning. This is art about art and artists, images and image production, signs and bodies; it asks us to engage with how we express and re-present, and how we relate to each of these embodied processes, both historically, and in the moment. We perform new-but-not-new images into existence, and these (now preformed) images feed back in to how we perform, again. Utterback invokes our relationship to her individual art works in order to evoke our interactive and affective experience of the work of art more generally. Here we explore, in body, the sensible concept, the emergent language, the preformed and performed continuity, of art.

5.4 Simon Penny

Artist, technologist and academic, Simon Penny, has conducted research since the mid-eighties that takes the forms of arts production, writing, teaching and engineering projects, among others, and, in its early incarnations, centred on the premise that "technological change has been *the* major force for cultural change for at least a century" (Introduction 1). In his edited collection of texts by artists and academics circa 1995,¹³³ *Critical Issues in Electronic Media*, Penny argues that "as we move out of the first technological era, that of industrial production, into the era of the digital, a profound

¹³³ The book comes after more than a decade of practice as an innovative artist and curator. At this point, Penny had already been working in kinetic sculpture, robotics and VR for some time, and in 1993, for example, he curated what was arguably the first-ever exhibition of exclusively interactive art at a SIGGRAPH (Special Interest Group on computer GRAPHics and interactive techniques) conference.

warping and rifting occurs across the cultural surface” (Penny, Introduction 1). He unequivocally asserts, “Electronic technology mediates our relation to our world” (Penny, Introduction 1). In his own words, then, Simon Penny’s oeuvre invites us to explore relationality and meaning-making through technological interactivity.

Penny’s work in the 1980s consisted of anthropomorphized kinetic sculptures (*Stupid Robot*, 1987), robotic projection machines (*Great Arcs*, 1987), and other art objects that integrated gadgets such as radio receivers (*Lo Yo Yo*, 1988) and/or infrared sensors (*Pride of Our Young Nation*, 1990-1991). He often invested his energies in creating illusions of sentience (*Petit Mal*, 1989-1995 and *Sympathetic Sentience*, 1995 and ongoing) or in sociopolitical simulations of our “organic” communication systems (such as the Internet, in *Big Father*, 1990-1991), in order to intervene in our experience and understanding of each. Many of these pieces are “referencing particular human behavioural characteristics, others playing on the history of machines” or media technologies (Plohman).¹³⁴

Penny has worked, more recently, on a range of projects that “focus their attention on the experience of the user as an act of communication, on the social space of the interface, and on the dynamics of interaction” (Penny, Consumer 58).¹³⁵ He himself calls for an enhanced “critical discussion of interactive media practice and interactive media cultural practice by introducing a consideration of the implications of embodied involvement in the process” (Penny, Representation). Like Jean-Luc Nancy, Penny here couples body and language, embodiment and sign, inside and outside, and attests “to the unacknowledged but pervasive power of physical behaviors in social and cultural formation” (Penny, Representation). For Penny, as for this dissertation and chapter, embodiment and interactivity play essential roles in the act of producing meaning, and thus need to be studied, challenged and critiqued, together. His art avowedly acts as “an intervention into certain prevailing attitudes regarding embodiment and interaction” (Penny, Fugitive 2). To that end, as a label for what he does, Penny prefers the “rather clunky ‘digital cultural practices’ to either new media or media art, partly because” he now thinks “the notion of ‘media’ is an irrelevant focus” for investigation and interrogation (Scholz and Penny). This statement, given in a recent interview, hints at how “media” or a

¹³⁴ For information on most of this, and recent, work, see <http://www.ace.uci.edu/penny/>

¹³⁵ It should be noted that ‘user’ was a term more common than ‘viewer,’ ‘performer’ or ‘participant’ with digital art such as Penny’s up until very recently; such pieces were thought of as more interface orientated than artistic, and thus ‘user’ was adopted from the fields of computer science and design.

“medium”-based work is thought of as a thing, an object to be seen or perceived rather than an emergent performance. Here Penny is speaking back to the same discourses critiqued in Chapter 2, and instead allying himself with the processual, potentialized “practices” of meaning-making within a larger culture. His art works use digital technologies, this section argues, to intervene in the relational co-emergence of bodies and discourse.

Penny’s current research comes out of his “critical assessment of VR” (Virtual Reality) in the early 90s “(then just emerging as a civilian paradigm)” (Penny, Smith and Sengers 47). It would be, he argued at the time,

an oversimplification to claim that the body is not present in VR interaction, for this would imply that the body is not the device through which we interface with the technology. But it would likewise be an oversimplification to claim that the body is *in* VR. The body, we might say, is partially present. It functions as an ‘effector,’ but the sensorial feedback is almost exclusively visual (with the occasional addition of sound). (Penny, Consumer 61-62)

Here Penny, in his own way, attempts to reclaim the body in Virtual Reality from the hegemony of vision. As opposed to Oliver Grau, who inadvertently equates seeing as the central embodied action/experience,¹³⁶ Penny asserts that the material body – and all that bodiliness is – is neither fully present in nor fully absent from VR. He thus began working with collaborators¹³⁷ towards creating a much more interactive experience (an art rig) that understands, and intervenes in, the body as always and never both inside and outside of the image, discourse, signs, writing. Penny and his collaborators, in other words, wanted to create a situation that would engage both the body-image and the body-schema,¹³⁸ both inscription and exscription, in Virtual Reality.

Despite its earlier birth, Penny et al’s “machine vision system” is an even more advanced and complicated version of the kind of computer vision that Utterback utilizes in her work. It similarly uses analysis and interpretation of live video images from the

¹³⁶ See Section 2.3. Given his place in VR history, Oliver Grau also writes on Penny and his piece, *Traces*, in his book, *Virtual Art*.

¹³⁷ These collaborators include Andre Bernhardt, Jamieson Schulte, Phoebe Sengers and Jeffrey Smith.

¹³⁸ The standard VR experience is, this paragraph argues along with Penny, an artificial space that separates the body-image – which is represented in the 3D world of a given virtual reality – from the body-schema – our navigation of said image.

interaction area (in this case, infrared images) to 'see' and respond to the viewer-participant. But where Utterback's art puts one camera to use in order to track bodies on a 2-dimensional plane from overhead, Penny's setup employs the use of four cameras, along with customized hard- and software, in order to calculate every embodied movement in a 3-dimensional space. In other words, this system, which later became known as the Penny/Bernhardt TVS or Traces Vision System,¹³⁹ combines its multiple video inputs mathematically to create a semblance of the body's full form in real time. Where Utterback's art responds to a mirror-imaged bird's eye view of the interactor, Penny's TVS can respond to our in-depth, en fleshed and sculptural forms. Like Utterback, Penny enables "unencumbered, intuitive, bodily interaction," the "same kind of bodily behavior [participants] might employ on the street, the dancefloor or the sportsfield" (Penny, *Fugitive 2*). But unlike her, or anyone else until very recently for that matter, Simon Penny and his collaborators compile full-body, 3D, real-time composited images of moving people in space toward that same end. This interface invites a complete, moving, affective and sensual sensorimotor body into the interactive experience of Virtual Reality.

The TVS was first implemented in Penny's *Fugitive* (1997), and later versions of it are in art works including *Traces* (1999), *Body Electric* (2003), *Fugitive 2* (2004) and *Spectre* (2006).¹⁴⁰ The following text will describe his *Traces* (1999, see Figure 23 and Figure 24, pages 128 and 130) and analyse it with the Body-Language implicit body thematic.

Unlike the customary Head Mounted Display goggles commonly used for Virtual Reality explorations, *Traces* is placed within a stereo-immersive CAVE (Cave Advanced Virtual Environment). In a CAVE, participant-viewers wear specialized glasses that act like the stereopticon in William Kentridge's work¹⁴¹ to turn eight 2D/flat images into four 3D and sculptural forms. These eight 2D / four 3D videos, which are rendered in real-time, are projected on the three front walls and floor of the CAVE, to create a virtual space that surrounds the entire body. It is important to note here just how enveloping a CAVE, and the interaction in *Traces*, really is. While the still images presented in Figure 24 can only show the 2D projections on the walls and floor surrounding the active performers, any

¹³⁹ It was named so after Penny's most widely-known, award-winning, interactive and immersive machine vision / VR piece, *Traces* (1999). *Traces* will be written about extensively in this section.

¹⁴⁰ Several of these works use the TVS along with the Courchesne (et al) Panoscope technology to form what Penny calls Telepanoscope/Vivatar systems, aka VAPID (Vision Augmented Panoscope with Interactional Dynamics) for "use in embodied interactive video, embodied teleconferencing [sic] / telematics and embodied multi-user virtual worlds." See Penny, Telepanoscope/Vivatars.

¹⁴¹ See Section 2.6.

given participant in *Traces* sees these floating “images” as 3-dimensional moving sculptures in the immediate space around them.

Traces uses the four infrared video cameras and “custom three-dimensional vision tools” (Penny, Smith and Bernhardt, *Wireless Tracking* 244) of the TVS to construct a “volumetric model of the whole of the user’s body in real time” (Penny, Smith and Sengers 48). This interaction area is itself placed within a stereo-immersive CAVE, which is programmed to “see” the moving body as a collection of “volumetric pixels” or “voxels” (Penny, Smith and Sengers 51). Each participant is thus more than a disembodied eye looking at a screen; he or she is a full body in an immersive 3D space. In the design of *Traces*, Penny et al aimed to privilege embodied enaction over visual investigation. They did not want “to present a panoptic spectacle for the user, but to turn the attention of the user back onto their own sense of embodiment” (Penny, Smith and Sengers 47-49). Therefore, they did not endeavour to produce a “‘world’ which is ‘navigated’” – its “graphical representations are minimal, texture mapping and other gratuitous eye-candy” are avoided – but rather a responsive and interactive environment that encourages gestural exploration (Penny, Smith and Sengers 47-49). Penny asserts that all “attention is focused on the ongoing bodily behavior of the user” (*Traces*), where participants’ interactivities are integral to, indeed *are* the work.

There are three modes of interaction in *Traces*, where each builds up to the next. Dubbed an “autopedagogic interface,” *Traces* introduces the “complexities of the environment” and how it responds to movement “gradually and transparently” (Penny, Smith and Sengers 49), so that participants can learn how to perform and manipulate its responses on the fly. In other words, the kinaesthetic language (and meaning) of the piece emerges through its interactive relation to the performance of a participant’s body in space.

Here I describe the three modes of *Traces* briefly, and in more detail below and within the framework in the following pages. In the first, ‘passive,’ trace (see Figure 23, page 128), the “speed and acceleration of the user and her limbs” (Penny, Smith and Sengers 55) draws real-time lilac-coloured voxels that slowly fade to nothingness, like volumetric trails of ephemeral bricks behind each flickering action. These ‘traces’ of our bodies look and feel like “volumetric and spatial-acoustic residues of user movement that slowly decay” (Penny, Smith and Sengers 47-49). Penny et al describe this interaction as “dancing a sculpture” (Penny, Smith and Sengers 48). As the software slowly crosses into its ‘active’ trace mode (see Figure 24, page 130), the small cubic voxels no longer fade to

nothingness at a standard rate. Instead, elements of randomization are introduced: each movement-concretized voxel may shift to any number of varying colours, for any amount of time, before it disappears. In the final, 'behaving' trace (again see Figure 24, page 130), performances in the CAVE initiate animal-like, flying statuettes that swoop and flock and tease the viewer in space. These user-spawned 3D animations follow complex behaviours that seem to give each of them a life of their own. This section argues that in these interactions, the co-constitutive relationships between/of body and image, inside and outside, embodiment and signification, are intervened in, and their per-formance is productively confused. Each is born of their relation, separate but together, different but in common, inscribed and exscribed.

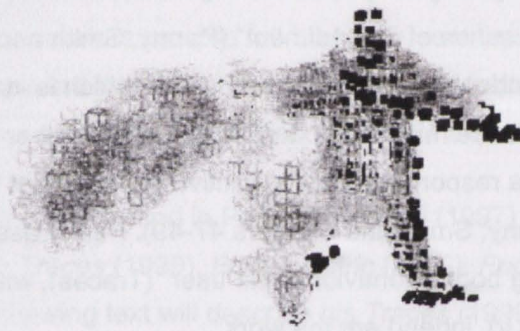


Figure 23, *Traces*, between "passive trace" and "active trace", documentation and simulation, Simon Penny et al, 1999
Interactive CAVE Environment, dimensions variable

With the passive trace, the shape of a participant's volumetric 'avatar' – a common noun used to describe how a person is represented in the various forms of cyberspace and virtual worlds – is entirely dictated by their movements in the CAVE. Their gestures leave trails of slowly fading blocks in their wake, and so audience members tend to spend time exploring their own motion and its fantasy-like remnants around them. They may drag their arms and legs in exaggerated gestures akin to yoga, or swish their limbs through the air in order to try and tease more interesting patterns into existence. As *Traces* progresses into its active trace mode, the movement of its interactor still generates voxels in real time, but rather than simply disappearing, these voxels follow a cellular automata algorithm similar to that of Rafael Lozano-Hemmer's subsculptures.¹⁴² Here "the number of neighbours a voxel possesses determines whether it will persist into the next time-step" in the fade, "and also determines its colour and level of transparency" (Penny,

¹⁴² See Section 4.4.

Smith and Sengers 60). As is its purpose, the generative programming in active trace mode gives the person/avatar's embodied voxels their own life-like quality, compiling "structures of varying stability in places where the user has been. It changes shape, sparkles and percolates in unexpected ways" (Penny, Smith and Sengers 60). Whereas the passive trace leads to an investigative and fantasy-like exploration of the body in relation, the more randomized elements of the active trace avatar forces compromise and negotiation on the part of the participant-performer. They must watch and listen to and play with the expressions of the outside, with more care, in a way much more integral to the compilation and completion of their-and-its 3D forms.

With the active trace, performers relate their movements to a greater discussion. They engage more cautiously, with slow mime-like stutters or sometimes frustrated swipes, as they birth and transform the surrounding environment and its 3-dimensional and life-like responses; and this environment, in turn, influences their own movements, again. Our bodies, with *Traces*, are thus, together, a discourse, a corpus that occupies the inherent coupling of an active embodiment with the outside, even in its use of representative forms. A performer's awkward inter-actions with *Traces* during the active trace amplify bodiliness itself as interactive relation. Here, we are a being-with the (virtual) world, and said world co-emerges as we engage its space. *Traces* offers direct but unpredictable 'contact' and 'syncopation' between the two. The "work" is an intervention in bodies and images – challenges them as things which can be read or understood or exist independently of one another – through its reliance on both to per-form.

In the final stage of *Traces*, appropriately called the 'behaving' trace, the viewer-participant's motions spawn "autonomous creatures" that fly around the space and interact with the user and each other" (Penny, Smith and Sengers 55). As seen in Figure 24, these are snake-like animals, trails of spheres that the programmers playfully call "Chinese dragons" because of how they are similar in feel to the segmented dragon floats used in Chinese New Year parades and celebrations (Penny, Smith and Bernhardt, *Wireless Tracking* 250). The interactor's movements "throw off" the dragons "as though the user is shaking off water droplets" (Penny, Smith and Sengers 60). After they fly off from the performer into the 3D environment in front of them, the autonomous agents follow a relatively simple set of rules using "particle behaviour language" (Penny, Smith and Sengers 60). These might tell a given dragon to, for example, always fly to the centre of other dragons or spiral around the area where there is the most motion. Thus, the creatures in the behaving trace may follow the user or, as Katherine Hayles puts it, "break away as a flock following its own artificial life dynamics" (*Flesh and Metal* 307). In other

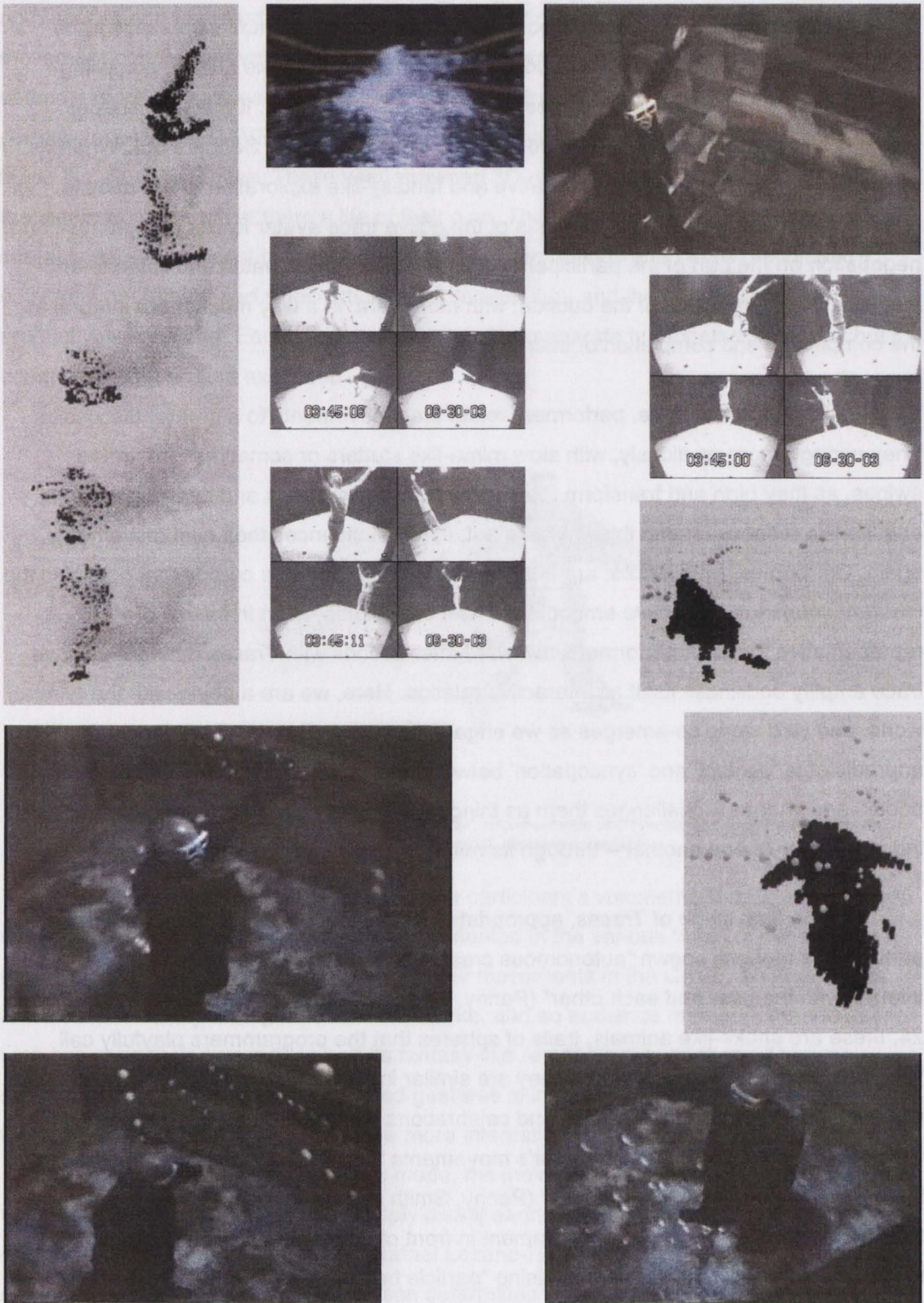


Figure 24, renderings, screen shots and documentation of performers inside Simon Penny's Traces (1999) CAVE installation (in its three modes), and using the Traces Vision System in other installations Interactive CAVE Environment, dimensions variable

words, the dragons begin to “exhibit their own behaviour, flocking together and following the user or exploring the virtual space” (Penny, Smith and Sengers 60). In the behaving trace, the “avatar” is both independent and entwined with its interactor. In a kind of reciprocal play, people “lay on the floor, jumped, danced, kicked and danced again”; they would “emerge from the CAVE sweating, panting and red faced” (Penny, Smith and Sengers 48-49).

As evidenced in the included images,¹⁴³ performing viewers would build up their own active participation along with the increasing behavioural patterns of the semi-autonomous agents in space. What begins as embodied exploration becomes a physical investment in inter-active and generative creation, through flicks and jabs, running and jumping, swiping and diving. *Traces* responds to our bodies, but over time, we must also be more responsive to it. A Body-Language thematic reading suggests that there is a dialogue, a corpus, between these two things (which are not things), as they find embodiment and the per-formed and performative (body-) language that gives them meaning, together.

Mark BN Hansen and Katherine Hayles – theorists visited considerably in Chapters 2 and 3 of this dissertation – have both written about *Traces*.¹⁴⁴ It was chosen as a case study, in part, to add to the discussion. The remainder of this section visits their texts and uses the implicit body framework to take understandings of the piece, and what we might learn from them, further. In their writings, Hansen and Hayles turn to art (and technology) in order to prove or grow philosophies surrounding embodiment. This dissertation understands philosophy and art, embodiment and interactivity, together. The subtle difference is in the articulation: like body and world, the implicit body framework treats art and philosophy as transductions, as co-emergent. This approach better enables the language and meaning and concepts and philosophies behind and in and with *Traces* to manifest from its coupling *with* embodied enaction. The sensible concept / thematic of Body-Language was chosen for *Traces* in order to focus precisely on meaning-making (philosophy, language, discourse) and its co-emergent relation to embodiment. Here the framework – which is informed and supported by Hansen and Hayles’ theories – deepens their readings through a relational coupling not found in their texts. It offers insight into

¹⁴³ But more so in the actual space or the video available for purchase from <http://ace.uci.edu/penny/stuff/index.html>

¹⁴⁴ As has Oliver Grau in *Virtual Art*. In a private email to me, however (21 May, 2008), Penny asserts that Grau’s text “egregiously... contains many factual errors” about the piece – how its interaction works and what the artists’ intentions were – and so Grau’s book was ignored here to ensure accuracy.

how *Traces* amplifies and helps us better understand, amongst other embodied performances, the relation of flesh and discourse.¹⁴⁵

One of Hansen's key arguments in his *Bodies in Code* is that man and technology evolve together. He says that human embodiment and experience – which are, he asserts, *always* technically mediated – are the primary factors in our evolution. He goes on to argue that contemporary artists' "varied use of digital media has pointed the way toward an introjection of technics into embodiment" (Hansen, *Bodies* x). In other words, digital art enables us to bring and incorporate the surrounding world, the technologically mediated world, into our body-schema.¹⁴⁶

Hansen claims that *Traces* "demonstrates that the disclosive power of the body schema is an essentially technical power" and that, "in the end, it emerges only through the technology that makes it possible in the first place" (*Bodies* 48). *Traces*, he follows, allows us to literally encounter a "body-in-code" in that our body-image ("self-representation") is "indiscernible from a technically generated body schema" ("enactive spatialization") (Hansen, *Bodies* 48-49). He argues that the difference between the two "has been entirely effaced" (Hansen, *Bodies* 49). Our experience of our "body proper" does not, in other words, take the form of a representational image, but rather "emerges through the *representative* function of the data of body movement" (Hansen, *Bodies* 49).

Hansen in fact goes as far as to say that in *Traces*, as, he believes, in the world at large, "the entire body schema – the coupling of body proper and environment – is generated by the technical system" (*Bodies* 47). Here, I argue that despite his careful reasoning around the co-evolution of body and technology / code, he winds up privileging the latter. Hayles too, even in her nuanced and self-critical treatise on relationality and the co-emergence of technology / signification with the body, is more comfortable with the system of language / philosophy / discourse, and so her text is most often concentrated there. It is perhaps my role as an artist, discussed at length in Chapter 7, which makes me more comfortable with materiality and the flesh, and enables a more balanced investigation of 'with'.

¹⁴⁵ This is to again say, for example, that an Utterback or Penny art work might equally benefit from being read with the thematic of Social-Anatomies (Chapter 6) or Flesh-Space (Section 4.4), among other thematics, as much as Body-Language. And each reading would add to the discourse / corpus surrounding the work (and embodiment more generally). In the case presented here, as will be shown, Hansen and Hayles read *Traces* as relations between body and world and technology; with my Body-Language reading, I intend to add to their research.

¹⁴⁶ See Section 3.2

Hayles' reading of *Traces* appears in her paper, "Flesh and Metal: Reconfiguring the Mindbody in Virtual Environments," previously discussed in both Chapters 2 and 3 of this dissertation. Here she argues that interactive art works are spaces that "make vividly real the emergence of ideas of the body and experiences of embodiment" (Hayles, *Flesh and Metal* 304).¹⁴⁷ In this text, Hayles puts forward three "modes of relation" for interrogating such work: "relation of mindbody to the immediate surroundings," what she calls enactment; "relation between mindbody and world," perception; and "relationality as cultural construction," enculturation (Hayles, *Flesh and Metal* 304). She parallels these to Don Ihde's work,¹⁴⁸ where Human-Technology-World relations can also be broken into three categories: Human+Technology in relation to the World, or "embodiment relations"; Human in relation to Technology+World, "hermeneutic relations"; or Human in relation to a Technological World (such as Second Life or the internet), "alterity relations." Hayles states that these "by no means exhaust the ways in which relationality brings the mindbody and the world into the realm of human experience, [but] they are capacious enough in their differences to convey a sense of what is at stake in shifting the focus from entity to relation" (*Flesh and Metal* 304-305).

Hayles places *Traces* within her mode of 'enactment': the relation of 'mindbody' to its immediate surroundings.¹⁴⁹ This techno-art-catalyzed body-world reading can be closely allied with Hansen's. She claims that *Traces* "occupies a middle ground between avatars that mirror the user's motions and autonomous agents that behave independently of their human interlocutors" (Hayles, *Flesh and Metal* 308). This "performance," she goes on, is "registered by the user visually and also kinesthetically as she moves energetically within the space to generate the entities of the Active and Behaving *Traces*" (Hayles, *Flesh and Metal* 308). It "makes vividly clear that the simulated entities she calls 'her body' and the 'trace' are emergent phenomena arising from their dynamic and creative interactions" (Hayles, *Flesh and Metal* 308). Hayles contends that *Traces* "enacts a borderland where the boundaries of the self diffuse into the immediate environment and then differentiate into independent agents" (*Flesh and Metal* 308).

To quote her summation in context:

¹⁴⁷ Hayles' understanding of 'body' and 'embodiment' are discussed in the aforementioned chapters.

¹⁴⁸ See *Technology and the Lifeworld: From Garden to Eden* (Ihde).

¹⁴⁹ Hayles asserts that in Don Ihde's modes, this would be Human+Technology in relation to the World, or 'embodiment relations,' and has some similarities to the Flesh-Space thematic presented in Section 4.4.

Far from the fantasy of disembodied information and transcendent immortality, *Traces* bespeaks the playful and creative possibilities of a body with fuzzy boundaries, experiences of embodiment that transform and evolve through time, connections to intelligent machines that enact the human-machine boundary as mutual emergence, and the joy that comes when we realize we are not isolated from the flux but rather enact our mind-bodies through our deep and continuous communion with it. (Hayles, *Flesh and Metal* 309)

Hayles' body and world co-emerge, and like in Hansen's text, she asserts that Penny supports an understanding of the body-schema, of embodiment, of relationality and emergence.

The implicit body approach to embodiment and interactivity is itself not dissimilar to the one proposed in Hayles' paper, and implicit body thematics are not completely unlike her "modes of relation." Her reading of *Traces* indeed adds insight and understanding, as is the goal of the implicit body approach, to both embodiment and interactive art. But like Nancy's critique of Heidegger – that the latter set up "being" before refiguring "being-with"¹⁵⁰ – this section maintains that Hayles (and Hansen) set up a separated art work / technology and participant before refiguring their dynamis. This dissertation does not argue for an extant body which can "diffuse" with its environment and then "differentiate" again, an embodied and artful "communion" or "connection" with, for example, the "boundary" of technology – words which unfortunately suggest the two as a priori, despite Hayles' argument for "mutual emergence" (Hayles, *Flesh and Metal* 308-9). The implicit body approach takes the per-formance of body and world and technology, together, as given. Here technology and the art work are not acting as catalysts or glue that entwine two things (which are not things); they act as a rig, a quotation, an intervention in, entwined relationships that are always already there, which are necessary – and in fact the very pre-condition – for being(-with). Interactive art such as *Traces*, this dissertation argues, creates potentialized contexts that *amplify* the fundamentally relational process of embodiment. Implicit body thematics, then, are not merely "modes of relation," but sensible concepts that are themselves emergent and in relation; they are used to examine an embodied investigation of a continuous embodiment plus x (plus x, plus x, plus x, ad infinitum).

¹⁵⁰ See Section 4.3.

This section's analysis of *Traces* with the Body-Language thematic adds to Hansen's and Hayles' readings a focus on the emergence of embodied reading (and writing) itself. It concentrates on how the body contributes to and distorts, but is simultaneously guided by, co-emergent 3-D images, here a parallel to embodiment and writing / discourse. With *Traces*, bodies move and are thus defined by the image-signs they concurrently create, and vice versa. It is a challenge to, and intervention in, the relationships of body and language through a performance that is precisely an opposition to pinpointed, language- image- and/or discourse-based, philosophical claims.

In the passive trace, performers tend towards slow investigative gestures: swooping arms, a dip and wave-making slip of the leg, explorations of the magical fades of the voxels in their avatars. In the active trace, when images begin taking on characteristics of their own, viewers' performances become more erratic; they try to control the images around them by ineffectually waving them away, slowing their movements then unexpectedly lashing out, flailing and failing at their attempts to have exacting control over the environment / embodiment / 3-dimensional image (and its meaning). In the behaving trace, they tend to stop trying to control everything in the space, but instead flick and kick their arms and legs in short motions, in order to at least command the birth of Chinese dragons, and engage in an ongoing play.

In the behaving trace, "user body movements spawn" inter-active agents that are somewhat "autonomous" (Penny, Smith and Sengers 50), "cultural artifacts that exhibit their own "behaviour."¹⁵¹ Said behaviours feed off of our own position and movements in the space, and in turn, our movements respond to the images around us. Here the work is not simply, as Penny and others say, a "point at which [a] computational system and the user make contact" (Penny, Sengers and Smith, Semi-Autonomous 5). The work is in highlighting the relationship that emerges, and that we emerge from. With *Traces*, bodies and images co-emerge, are written through their performed interactions with one another, guiding and birthing, tracing and transforming, feeding back between what we do, what we see and what each means in and through and to and with the other.

Here we see and read what we perform and make, together. Bodies interacting in trace-space contribute to the construction and constitution of the image-world in the VR environment which they are interacting with. Since *Traces* does not re-present the body,

¹⁵¹ Quoted from a video of *Fugitive 2*, available for purchase at <http://ace.uci.edu/penny/stuff/index.html>

but rather the body's *movements*, the images that participants make, read and respond to are precisely processual and per-formed. These images, like the body, emerge from the (outside/inside) space of relationality, and together they produce meaning.

The relationship that the work of *Traces* frames is between/with explicit and implicit, construction and constitution, inscription and exscription, body and sign. Its significations and symbols are inscribed, in real time, through our incorporating practices, and simultaneously take on a symbolic life of their own, informing how we perform before, during and thereafter. Acting together, body and language emerge together, re-presented, in the Nancyean sense of the word.¹⁵² We come to sense, to mean, to be-with. A Body-Language reading of *Traces* does not support a philosophy of embodiment, but rather shows how the work exscribes both embodiment and (its/our) philosophy.

Interesetingly, Penny and his collaborators have also proposed an as-yet-implemented version of *Traces*, one that is “networked, so that users can interact with each other’s mediated trace-avatars” and the semi-autonomous agents that are spawned off of their volumetric re-presentations across several CAVEs (Penny, Sengers and Smith, Semi-Autonomous 2). Here, there are many performers, which don’t see one another, but only the resulting images from their inter-actions. So if, for example, there are 3 CAVES, each performer interacts with the traces and autonomous agents of the other interactors.

This unrealized networked version of *Traces*, which ties the contact between several audience members to a collaboratively constructed VR image – a co-original backdrop that feeds back into how we inter-act – maintains an unambiguous kinship to the Body-Language sensible concept: we relate with and through the movements of our bodies, creating and incorporating a language that lives only through those very same movements. But, through its collaborative efforts, it also opens up the possibility of an/other reading, one that engages with the collaboratively constituted social order, and looks towards reciprocity and exchange between several bodies. It leads the way toward the next thematic discussed in this dissertation: Social-Anatomies. The following chapter will introduce and describe Social-Anatomies as a sensible concept and thematic approach to understanding interactive art, and use it in two more intensive case studies of work.

¹⁵² See last section.

6 Social-Anatomies

6.1 Introduction

In the year 2000, international artists Ralph Borland (South Africa), Jessica Findley and Margot Jacobs (both USA), collectively known as The Millefiore Effect, produced the first version of their now well-known, *Front* (see Figure 25, page 139), a wearable and interactive sculpture. This being the only concrete collaboration between all three, it is hard to construct a narrative around their general approach, but each has gone on to use art, design and technology as means for provocation, investigation and / or innovation, respectively.

Ralph Borland, for example, develops and writes about “projects that address social issues through creative means, and [that]... look at the politics of technology”; taking cues from activist groups and under the blanket term “provocative technology,” Borland investigates “tools and technologies that combine the attributes of art and design to make objects” that “may have an immediate function to perform, but that also serve as pointers” to specific “social conditions” (Borland, DDT). Jessica Findley’s other work ranges from collective, interactive experiences that “transform the everyday public landscape and make people giddy or baffled” to, for example, “a serenade for plants”; she’s interested in “the idea first,” then follows through to the emergence of a story and art work with her materials and through public interaction (Debatty and Findley). Margot Jacobs’ subsequent work is focused on the “playful, emotional incorporation of technology in everyday life,” and she “holds a deep interest in developing innovative design methods and experimental prototypes for social interventions in public space” (Jacobs). She’s co-founder of the California-based Keep Company, a green (i.e. sustainable) shoe and clothing outfit.¹⁵³ The team as a whole worked to create a wearable piece that was seemingly integrated with its participants’ bodies; players were then encouraged to perform publicly, and the dynamics of their interaction were meant to elicit “behavior we see in few other contexts” (The Millefiore Effect).

Front consists of “a pair of sound-activated, inflatable ceremonial conflict-suits” (Borland, *Front*). The work is, according to Findley, “an endless game of vocal battle between two people who wear suits, equipped with fans, [activated to] inflate when they yell” (Debatty and Findley). Gallery-going participants take it turns, two at a time, adorning

¹⁵³ See <http://www.keepcompany.com>

Front's suits and facing each other in a small marked-off ring. The volume of each wearer's screams inflates their own suit's 'aggressive' parts— pointy horns, boxing gloves or wings – whilst their 'opponent' sprouts protective, but ultimately constrictive, forms around their more vulnerable flesh.

In the accompanying, and mostly humorous, video documentation (The Millefiore Effect), the team explains that they began with the question, "How would it feel to express your emotional state through large changes in the shape of your body?"¹⁵⁴ They "looked for inspiration from animals which could transform their own bodies," and "used the volume of their voices" as a "crude metaphor for emotional state" (The Millefiore Effect).

Once suited up and told to begin, the power of each participant's yells or cries in their face- (or perhaps body-) off has a physical affect on both them and the other. Aside from the verbal and visceral taunting, pointing and physical jabs that may come from any given screaming and growling person towards his or her subjected, and perhaps weakened, listener, this interaction quite literally amplifies and inflates the potential power hierarchies that emerge from any given relationship. As is demonstrated in Figure 25, we see not only aggressive and defensive positions coming out of any given duel, but also shock in the eyes of the duellers, as they recognize that their own bodies – both natural and prosthetic – and voices and feelings continuously feed back into their, and their opponent's, tangible forms and emotional states. Although mostly playful howling matches – you can hear laughter all through the video documentation – this is also a serious investigation of how action, perception and the body itself all co-materialize from a network of interacting agents, rather than one affective source.

The tensions between how each participant affects the other, in sign and material, body-image and body-schema, stasis and continuity, accent the body as – if we take Massumi's definition – virtual. Unforeseen dynamics between suit, opponent, audience, voice, body language, perception, action and reaction become precisely that "reality-generating potential" that emerges from the virtual cusp between possibility and actuality (Massumi 123). To revisit some of Hansen's language, *Front* remembers both the operational and observational perspective; it asks us to engage our immediate environment and all other acting participants and resonating objects within its space. Both armour and disarming, protection and provocation (Borland, Suited), these suits and their

¹⁵⁴ Cited / transcribed from online video documentation available at <http://www.millefiore.info/>



Figure 25, Front by The Millefiore Effect, 2000
"human-sized" Interactive and Wearable Sculpture and Performance

integral performances, concretize, intervene in, and make physical our emotions, both visible and invisible, as and in the interaction between bodies. *Front* asks participants to explore the emergent relationships between embodied performance as governed by societal rules, and the social role that embodiment has to play in the space, and interaction, between people.¹⁵⁵ It intervenes in the sensible concept that this chapter refers to as Social-Anatomies, and the thematic of the same name is a mode of thinking for, and approach to understanding, such work.

Social-Anatomies follows the “logic” of Jean-Luc Nancy’s principles of plurality, builds on the co-original categories that we *are-with*, discussed in Chapters 4 and 5.¹⁵⁶ It extends this thinking in order to examine art works that intervene in how bodies perform – are dispersed, enacted, entwined, interfered, differentiated, shared and continuously embodied – with each other. It is deployed to think through how interactive art works might un- and enfold precisely ‘bodies,’ all engaged across a sea of flesh. Elements from the social and the affective body are accented together, to make explicit the implicit, and vice versa.

Touching between bodies is, for Nancy, unparadoxically always a sharing and a separation, it is an instance of both contact and difference.¹⁵⁷ It is touch with tact. Touch is multivalent, incorporating both of the senses of the “sense of touch” and the sense of “to touch someone” – to come into contact with, to move or affect. We touch the limit of the other but the other is not immediately given to our touch. Our touching does not fix and confer meaning – bring to presence – the other as same, but is touching “in both a tangible and intangible sense, to gain access to her specificity, to be exposed to it, to be affected by it and to respond to it, not to subsume or annihilate it” (Sorial 78). Here neither individual is inscribed within or via the other – they are not touched/moved in the sense that they have accessed the heart of the other, or felt them in all their fullness/presence. Rather, they continuously co-emerge in and from their reciprocal touching.

In this sense, by engaging with ‘bodies,’ with “embodiment plus embodiment,” we are also engaging with the process of differentiation, with the contact and difference that produces ‘body’ from within ‘bodies.’ Each ‘body’ in this ‘body of bodies’ (a corpus of/as

¹⁵⁵ Also see 5050ltd.com for another arts collaborative working with similar wearable technologies and www.whitney.org/www/2008biennial/www/?section=artists&page=artist_dragons for Luke Fischbeck’s *Make a Baby* (2005 and ongoing), a project that generates real-time sound based on skin contact between audience members.

¹⁵⁶ Nancy’s understandings of ‘people’ and a ‘corpus’ are especially relevant here.

¹⁵⁷ See Nancy’s *partagé*, defined in Section 5.1

social anatomy) is “affected in and through the other, responds to the call of the other, is exposed to the other, as something (no-thing) unfinished and unaccomplished” (Lyotard 112, qtd. in; N. Sullivan).¹⁵⁸ The body and corpus emerge not of essence or substance but as series: as a series or multiplicity of contiguous states that are neither fullness nor nothingness, outside nor inside, part nor whole, function nor totality. Coming into touch with bodies – coming into contact with the limits that enable something to take place – produces a body (and bodies). This is a body that is multiple in its circulation of touches and separations as it divides and relates to itself and others.¹⁵⁹

The name “Social-Anatomies” was chosen for this sensible concept and thematic not only as a gesture towards bodies, but also the organic and elaborate nature of parts and wholes that only “are” in relation to other parts and wholes. The thematic is intended to help add insight into interactive art works that intervene in the complex system of embodiment by engaging with bodies as (always) *plural*. Through it, embodiment is understood as interrupted by other inter-acting bodies, and this ‘interruption’ is highlighted as the process of embodiment itself. Participants entwine themselves with the entire implied network of living, physical bodies; they explore bodiliness as more than the experience of *one’s* body – it, rather, emerges from the relation between *all bodies*. Here *one’s* bodily position is only derived from its relational movement to *others’* (Massumi 7-8). These are art works that invite bodies to move, and to touch. They interrogate the relational performance of embodiment and bodies as co-emergent singular pluralities.¹⁶⁰

¹⁵⁸ What is at stake for Nancy in this is far-ranging and paramount: “The body, as an expression of meaning by virtue of its singularity or alterity, is the site where both ethics and community take place” (Sorial 4). “We” is, for Nancy, the expression of a plurality. It expresses “our” being divided and entangled: ‘one’ is not ‘with’ in some general sort of way ... a ‘we’, even one that is not articulated, is the condition for the possibility of each ‘I’” (Sorial 3). While the subject is always singular, she is not isolated in her difference, but is rather exposed to, affected and touched by, the other. The central point here is that “we” are always in relation, we are always “I” as something shared with others, not as a fused collective or a collection of autonomous individuals. This is an ethical mode of being that seeks out and affirms otherness. It is a tactful, rather than tactical response, “the testimony of a fracture, of the opening onto the other,” rather than “an experience conducted by an I in the quest for self-knowledge” (Lyotard qtd. in Sullivan 6). Touch then, for Nancy, opens up space’s strangeness. An ethics that is tactful recognizes the need to maintain the space between self and other, and to make contact.

¹⁵⁹ Is this problematic for bodies that have not had the privilege of being seen as self-identical and whole? Jean-Luc Nancy, as so many, pays scant attention to gender, for example. But, argues Perpich, his account addresses “those bodies considered borderline without having to position them at the outer limits (or, for that matter, at the center)” (7). His work also augments the work of feminist philosophers such as Judith Butler in its movement beyond the *a priori* instantiation of social constructionism – the sexed body that is prior to the social inscription of gender.

¹⁶⁰ For more on Nancy’s *Being Singular Plural*, see Section 4.3 and Chapter 5.

The following Section, 6.2 “Body and Society,” first outlines Social-Anatomies as an emergent sensible concept. It turns to English sociology scholar Nick Crossley, and his work on intercorporeality, to tease out an understanding of how we perform bodies with society. The section then goes on to cite provocative questions and assertions first posed by the contemporary journal of the same title as this section, *Body and Society*, to illuminate several ways in which art-induced, embodied social structures might be read and better understood through Social-Anatomies as an implicit body thematic. Sections 6.3 and 6.4 look at work by Mathieu Briand and Scott Snibbe, respectively, unpacking how work by each artist engages and intervenes in our collective and social embodiment. In addition to their art’s attendance on this thematic category, Briand and Snibbe were chosen to demonstrate a convergence of the implicit body’s underlying ideas and practices across somewhat differing geographical locations, contexts and practices. In counterpoint to the US-based digital artists discussed in the last chapter, Briand is a European-based artist recognized in “contemporary art” institutions that do not have a new media focus – for example, *The Tate*, the *Venice Biennale*, the *Louvre* and *Art Basel*. And while Snibbe is a part of the US digital arts community and a colleague of Utterback’s, his background is in film and narrative rather than visual art. The selection of Briand and Snibbe brings the implicit body framework to a wider contemporary art spectrum than visited in the preceding chapters of this dissertation.

6.2 *Body and Society*

In his paper “Body Techniques, Agency and Intercorporeality: On Goffman’s Relations in Public,” Nick Crossley reads the work of sociologist Erving Goffman, who most famously wrote *The Presentation of Self in Everyday Life*,¹⁶¹ through the writings of philosopher Maurice Merleau-Ponty, most well known for his *Phenomenology of Perception*. Given Merleau-Ponty’s decisive attention to the flesh, the senses and human experience, and Goffman’s standing as a pioneer of social theory, performance and interaction, Crossley’s paper is an ideal place to start in unpacking what the Social-Anatomies thematic attends to in its analysis of interactive art. Crossley asserts, for example, that the “active body and the social world as a stage of action are completely interdependent” (Crossley 147). And with Goffman (understood through Merleau-Ponty’s phenomenological lens), he proposes that “embodied action... is oriented to and articulated with an embodied world, such that it cannot be understood independently of

¹⁶¹ As the title of his paper suggests, it is Goffman’s lesser-known *Relations in Public: Microstudies of the Public Order* that mostly serve Crossley’s text.

that world: that is, of the dangers, exigencies, rules and requirements of that world understood as a moral-practical (and perhaps political) world" (Crossley 147). In other words, performing bodies make and rely on the social world and order, and vice versa.

Crossley is "not only concerned with *what is done to the body* in the context of the social world, the ways in which *it is acted upon and represented*," he is also concerned with "*what the body does in the social world, how it works to construct and reproduce that world, how it acts*" (Crossley 147). He maintains that "practical embodied action" is "interwoven with the perceptual field" of the interactor, what he or she sees and understands through the "visual, sonorous, olfactory, tactile and saporous order" (Crossley 136). He's quick to add, however, that this perceptual field of which we are a part is made up of "social situations which require specific ritual and practical accommodation from our action. Our perceptions enjoin us to an 'interaction order'" within society (Crossley 136).¹⁶² We are a part of, interact in, and instantiate, a collaboratively embodied cultural space. In other words, "the distinct projects and actions of embodied agents are ... coordinated (in an on-going and ad hoc fashion) within the shared spaces" of the social world (Crossley 139).

The crux of Crossley's argument underscores Nancy's bodies that 'touch' and the what the implicit body thematic of *Social-Anatomies* aims to call attention to:

others are available to us, directly, and [we] are available to them, directly, in the form of our behaviours; subjectivity is not private and inaccessible, it is worldly and publicly available. Further to this, the suggestion is that, in focusing upon behaviour, we arrive at an understanding of ourselves and of others by the same route. (Crossley 143)

Put differently, how we act, behave, per-form, as embodied and physically interactive agents, takes place in and simultaneously constructs the embodied and social world at large. Crossley argues, via Merleau-Ponty, that body and world, self and other, "mind and matter, materiality and ideality, sentience and the sensible, or subject and object" do not "exist as different 'substances'" (142). While it may be a useful distinction to think these aspects of being as separate, he goes on, "such distinctions are not sustained (as

¹⁶² This is not, it should be noted, at odds with the implicit body, which, like Hansen, understands affect as a precondition for perception. It rather re-cognizes the feedback between affect and perception, embodiment and the social order.

absolutes) at the level of fundamental ontology” (Crossley 142). Crossley, like Nancy, rejects the idea of an a priori body, of presupposed subjects or worlds; he declares “intersubjectivity” – his version of Nancy’s being-with – as the precondition for emergence. All of us, Crossley asserts, “belong to and are part of the same world” (143). We “belong to each other by belonging to a common world. This does not preempt the possibility of distinctions and conflicts between different groups, but it suggests such divisions are relational and thereby secondary to a prior unity” (Crossley 143). The key to Crossley’s thesis – and to *Social-Anatomies* – is that bodies and social *orders* feed back between one another as active and incipient organisms.

Following Marcel Mauss,¹⁶³ Crossley calls embodied action ‘body techniques.’ Here, there is a direct “relationship of action to perception” (Crossley 144) and, like the body-schema,¹⁶⁴ body techniques are “pre-reflexive” (Crossley 139). According to Crossley, they follow

rules without the mediation of conscious (or otherwise ‘mental’ processes). This is an important point because it establishes that it is the actor *qua embodied* actor (and her body techniques) that are coordinated with the micro-public order and not a subject who is prior to, or in some way divorced from, this corporeal-social order. It establishes that embodied action is the principle of its own intelligibility and its own coordination with the public order, that the *exercise of body techniques* is directly and immediately governed by the rules and exigencies of their immediate situation. (138)

While body techniques are pre-conscious, they are still “dependent upon specific ritual considerations which are characteristic of the public order *qua public* order” (Crossley 142). They are learned, physical responses/actions that our affective bodies can adapt and apply “in accordance with the demands of particular situations” (Crossley 137). They are activities and responses that we’ve been habituated to, but ones we now do without thought or reflection; to cite a more commonplace phrase, body techniques are ‘second nature’.

What Merleau-Ponty and Crossley refer to as intercorporeality serves “as the context for the exercise of body techniques” (Crossley 144). It “revolves around the

¹⁶³ See “Body Techniques” (Mauss).

¹⁶⁴ See Section 3.2

notion of relations between sentient-sensible bodies,” and is “the public order in which body techniques are exercised” (Crossley 144, 139).¹⁶⁵ But vital to this understanding is that intercorporeality “itself is constituted (practically) by body techniques – by means of actions, gestures, modes of comportment, etc, that manifest the intentions, feelings and more generally subjective ‘states’ of social agents” (Crossley 146). The spaces of the world, which are always already intercorporeal, are “hives of on-going, situated actions, and these actions constitute and reproduce those spaces and that world” (Crossley 146). “Social organization,” Crossley argues, “is based upon the intercorporeal availability and circulation of meanings and this intercorporeality, in turn, is based upon body techniques” (146). Body techniques take place within the social, intercorporeal order, which, “at the same time, they constitute and organize” (Crossley 147). There is an interdependent, “relational constitution of body techniques and intercorporeality,” of our actions and our (social) world (Crossley 134). Body techniques and our intercorporeality, embodied activities and the society they inhabit, are interactive, reciprocally co-constitutional, and reliant on one another’s per-form-ance.

The Social-Anatomies thematic is used to study art works that intervene in this co-original relationship between embodiment and the embodied social order. The phrase and sensible concept is itself purposefully ambiguous, alluding to the feedback loops Crossley suggests. ‘Social-Anatomies’ can reference the socially per-formed body techniques of one active participant or several embodied agents within the art work’s clutches; it might point to intercorporeality as a contextual network of organisms; or it may address all of these all at once. The Social-Anatomies thematic helps us better understand art that intervenes in contact and difference, embodiment and society, body techniques and intercorporeality. The situation of the interactive art work puts these various relationships in quotes, intervening in their co-original enaction.¹⁶⁶

Such works re-cite and re-situate bodiliness and society, opening them up to the kinds of ongoing discussions that we find in the interdisciplinary journal of *Body & Society*. In the introduction to the first issue in 1995, editors Mike Featherstone and Bryan S. Turner explain that the establishment of the journal is testament to the expanding interest in the body in the academy and in popular culture. They state, “as an overt and thematized issue now appears to be central to a good deal of contemporary thought and

¹⁶⁵ Crossley understands intercorporeality by applying the philosophies of Merleau-Ponty to the sociology of Erving Goffman. See Merleau-Ponty’s *The Phenomenology of Perception*, *Signs* and *The Visible and the Invisible*, along with Goffman’s *The Presentation of Self in Everyday Life*.

¹⁶⁶ See Section 3.5 for “situations” as “potentialized contexts” (Massumi 265).

practice” (Turner and Featherstone 1). The body as “a sign and symbol of social and political processes,” as well as its physical presence, is, they assert, ubiquitous (Turner and Featherstone 1). They go on to map out four “deep theoretical and interpretative” areas of inquiry, which they hope the journal, and the discourse it attempts to engage, will address (Turner and Featherstone 6). I briefly summarize these below in order to highlight them as parallel areas for investigation and intervention in the Social-Anatomies thematic.

1. Turner and Featherstone ask, “What is the body and what is embodiment? A theory of the body requires a systematic and sophisticated understanding of the fundamental notions of body, body-image and embodiment” (6). Here, they hope to provoke discussion around not only *what* a body is, but *how* it is, and how it is that we (as bodies) are available to society, and vice versa. The authors cite “recent publications... [that] claimed that the project of the self in modern society is the project of the body” (Turner and Featherstone 6-7). This idea is central to the implicit body framework and Social-Anatomies thematic.

2. They aver, “We need to develop an embodied notion of the human being as a social agent and of the functions of the body in social space” (Turner and Featherstone 7). These functions, I am arguing, are equivalent to body techniques, the operational and performed body in society. Turner and Featherstone invite a context for understanding bodiliness within the social order, in the intercorporeal. Similarly, the Social-Anatomies thematic attempts to critically examine interactive art works with a focus on the embodied activities of the interactor(s). It looks at ‘society’ as always already in conjunction with the viewer-participant who enacts and finds bodies-with-social space through their interactions.

3. “We need a sociology of the body which will do more than give an account of the representational or cultural notion of the body, that is, we need to understand how embodiment is fundamental to the processes of reciprocity and exchange between humans” (Turner and Featherstone 8). Here, with perhaps different language, Turner and Featherstone address intercorporeality directly. This area of inquiry is the context of social space, the situational ‘with’ of (between) Social-Anatomies. The interactive art works in this thematic implicitly interrogate “embodiment plus embodiment” through the explicit relationships – the contact and difference between bodies – that they invite us to explore.

4. And finally, “We also need a strong sense of the history of the body” (Turner and Featherstone 8). This area of inquiry addresses intercorporeality’s legacy, continuously feeding back between both the social order and our body techniques. It is

inscription and signification. But, as alluded to both by Crossley and by Nancy's notion of exscription,¹⁶⁷ we must be careful not to see this history as static or merely as a social construct. "Much of the historical research in this area has been on changes in the representational nature of the body in human societies... within a constructionist framework" (Turner and Featherstone 8). The history of the body is, itself, an emergent sensible concept.

These key areas of inquiry can be thought of as parallel to those posed by the implicit body framework set up in Chapter 4, but are more specific to the context of an embodied society. This can be done by replacing the art work in my framework with the body in society. What is the artist's inquiry becomes the question, What is a body and how do we understand it? The description of the work asks, How does it move within society? How we interact would ponder, How do body and society interact? And, to replace the implicit body's relational thematics, What does this relationship imply (both historically and continuously)?

What follows is a reading of two artists within the Social-Anatomies thematic. Each work interrupts the process of intercorporeality by intervening in viewer-participants' body techniques (and vice versa). A critical examination of implicit body interactive art works within the Social-Anatomies thematic shows how they might accent the relationships between embodiment and society, asking us to investigate, with our bodies, some of the core ideas put forward by Merleau-Ponty, Goffman and Crossley, and the key areas of inquiry posed by Turner and Featherstone. They aim to grow our understandings of embodiment and interactivity, as well as that of the body with society.

6.3 Mathieu Briand

European art star Mathieu Briand's ongoing body of work (which spans interactive and social environments; public performances that involve volunteers; long-term collaborative music projects that incorporate physically produced sounds by active participants; as well as traditional media-based works of contemporary installation, video, prints and more) are an avowed investment in linking "public space, the human body and technology" (L. Gray 16). They form "a continuing multimedia project that focuses on... the body – in both its sensory capacity *and* its political construction" (L. Gray 16 my emphasis). Here, "public space" is not a physical, architectural place, but a relationship

¹⁶⁷ See Section 5.2

best described as the locus of intercorporeality. It is the ongoing, cyclical and emergent social context in which we enact body techniques, and where, in turn, body techniques produce that social context. As such, Briand's work, most specifically his multi-person interactive video systems, is an ideal case study using the Social-Anatomies implicit body thematic, as the following discussion will illustrate.

Like Crossley et al, Briand sees a direct relationship between perception and action; his interest is in "challenging our senses, disrupting our habits, bending rules, confounding our relationship to space and objects, turning viewpoints upside-down" (Jouanno and Briand 115). His work "distorts and disrupts" our "ritual" behaviours (Art Review), while simultaneously making implicit the connections between body and society through the interactivity it engenders. His work, he asserts is not work "you... look at," it is this participation, and it addresses plurality, always. Says the artist, "I try to put the public in the center" (Dea).

How Briand approaches his art works, he calls them "systems," resonates with his interrogation of the body in society. The systems he develops are themselves tweaked and changed over time, echoing the incipience of bodies and society, the contact and difference between the two in the process of their mutual emergence. In other words, his practice, like his work, encompasses a "complex ensemble made up of different elements" (Jouanno and Briand 115). He is constantly re-working connections between people and ideas, bodies and culture, through re-workings of his projects. He re-uses fragments, technologies, content and concepts from older installations, which then get fed back in to later ones. This ongoing relationship between parts illustrates a linkage between his practice and the thematic of Social-Anatomies: there is a continual refiguring of the rules, exigencies and formations that produce and emerge as his series of art works.

These works, for Briand, resonate with his understanding of "*individuum*: namely, individual, undivided" (Jouanno and Briand 115). He believes that one must "start with division to get to a whole.... conceptually, aesthetically, or even technically all the works," just like all people, all bodies, "are connected to one another" (Jouanno and Briand 115). Here Briand sets up his system of systems as a complex and organic (social) anatomy itself. This section argues that each piece creates nodes of contact between his body of work and the body with/in society. Each intervenes in the undivided and working parts that are working together to form an ongoing/continuous system that is "more than the sum of its components" (L. Gray 16).

Briand avers that he tries “to conceive works within which the visitor becomes a receiver-emitter” (Jouanno and Briand 115). His art works “don’t lead the viewer to a truth or a response, but rather lead... to oneself” (Jouanno and Briand 115). That being said, this “oneself” is only understood in relation to other receiver-emitters, one’s body is always within a plurality, a social order. Every-thing, Briand argues, “evolves according to the connections” (Sensorium 54), is, I follow his lead, an emergent system made up of inter-active “bodies” that are always already implicated in one another.

Briand’s continuous re-makings of his work mean case studies of specific pieces are difficult to write. His interactive video system, for example, has been developed and refigured at various points between 2001 and the present day. “The work is never static. As an ongoing public project for the last 10 years, the installation has expanded with new forms of media that Briand adds while continuing his investigation of perception and presence” (Dea). It is best understood, then, as a series, precisely as “an ongoing public project” that continues to develop through its various instantiations. Like society and like the body, each instalment is a stop-point, seen only in hindsight, along Zeno’s arrow’s path.¹⁶⁸

Briand says that his art work titles, which shift with every instance, are not descriptive or representative of meaning, but rather “concise descriptions of their provenance” (L. Gray). He uses semiotic codes that relay idiosyncratic information about where the ideas came from, what past systems he is building on, or what music he was listening to at the time. The particular video installations written about here have been known as, at various points in time, *SYS*05.ReE*03/SE*1\ MoE*2-4* or *SYS*017.ReR*06/PiG-EqN\ 5*8* or *SYS*017.ReR*06/PiG-EqN\15*25* or as part of a larger project entitled *UBĪQ: a Mental Odyssey*. And elements from these impossibly named works have also been used in other, dissimilar, systems Briand has produced over the last decade.

According to Briand,

This is not a title but a classification code. It is part of a unit composed of other SYS. The aim is not to replicate (mime) a gesture but simply to note its existence among the others. The gestures are autonomous but

¹⁶⁸ See Section 3.2 for more on the Zeno paradox.

coordinated. Together they form a movement. It is a question of impermeable systems placed before bodies. (Briand, SYS*011)

Here, Briand's naming mechanisms could be said to parallel the social order, which both pre-exists, and is continuously birthed and transformed by, any given work. These moving and gesturing formations, the pieces that could themselves be seen to represent enfolded 'bodies,' are both autonomous and an incipient part of the larger system that helps to define them. With regards to Briand's names in practice, and for ease and sanity, the art work (and art re-work-ings) discussed in this chapter will henceforth be called Sys05, pronounced "sis oh five."

Sys05 poses the question, "What would happen... if the perception of another subject were to intervene into our point of view?" It is a situation where an- "other subject's perceptions [are]... experientially shared" (Hasegawa 51). The installation explores what if "two people could see what the other is seeing simultaneously? [And] What if this shared or swapped viewpoint could be exchanged among several individuals?" (Hasegawa 51) The resultant plurality of "overlapping of visual experience" would not only "enable us to enter another's visual domain; it would also unsettle our own, requiring us to constantly confirm our compromised perceptions" (Hasegawa 51). To achieve this, Sys05 (see Figure 26, page 151) literally turns its participants into audiovisual transmitter-receivers, "allowing them to switch from seeing straight ahead to witnessing what other people" see (Art Review). Participants are each outfitted with networked helmets that incorporate video cameras, microphones, video screens and earphones, and each instantiation of Sys05, each slightly different system that came out of Briand's ongoing exploration, allows for different ways to connect or swap feeds with other device-wearing participants.¹⁶⁹

Some instalments have as few as 5 wireless helmets, where each viewer negotiates a large, garage-like room, and is able to switch feeds with the click of a button. Other versions are 'wired,' where performers plug their wearable gear into up to 14 different jacks, which connects them to not only other helmets, but 16 stationary audiovisual feeds scattered throughout the museum or building. Here, Briand's system

¹⁶⁹ Kazuhiko Hachiya's *Inter Dis-communication Machine* (1993) is similar in its application of video headgear with swapping views; it is an internationally exhibited and award-winning piece that invites (only) two viewer-participants to interact with one another through the other's eyes. See www.petworks.co.jp/~hachiya/works/IDCM.html and www.we-make-money-not-art.com/archives/2005/05/through-the-dev.php



*Figure 26, various "Sys05" documentation, Mathieu Briand, 2001 - present
Interactive Installation, Performance and Architecture, dimensions variable*

might have us “exchange audiovisual experiences with others,” (Briand, SYS*017) or view ourselves, other viewers or empty rooms from one of the many possible perspectives of the system itself; most often, participants are unaware of what or whose sound- and viewpoint they are experiencing.

In each, Briand develops a kind of “matrix combining fixed views inside an architectural space with dynamic views seen by humans” (Hasegawa 53). When participants plug their “headset jack into one of many outlets found throughout” the building, they “exchange sound and vision with other visitors or sometimes with images from fixed cameras” (Hasegawa 53). In other words, they both offer up the audiovisual feed from their own helmets into the system for others to potentially experience, and simultaneously and spontaneously get one of an/other participants’ (or a static camera’s) feed into their own helmet. “Briand’s fixed images were shot in similar-looking spaces he found in the museum, resulting in a strange disconnect in the visitor’s field of view – the shape of each room does not change and yet the person or work in that room does” (Hasegawa 53). Although the helmet only offers sight and sound between parties, audience members’ other senses are activated along with their mobile bodies in their immediately surrounding space. Each intervenes in the other, interrupts the system at large.

As evidenced by the mostly still, and somewhat confused-looking, participants in the documented images (see Figure 26, page 151), our “usual sense references are perturbed” (Jouanno and Briand 116). And it is this destabilization,” argues Briand, “that allows us to discover new things” (Jouanno and Briand 116). As visitors “move in and out of the role of audience and performer” (Dea), their “eyes momentarily grope for their bearings” (Mizota). It is an overwhelming sensation to be a “body displaced” (Briand, Sensorium 54), and one that is also looking, or hoping, to gift that very experience back to others in the system. Here, one can greedily plug or click into the system / matrix to gather experiences and perceive and conceive of intercorporeality, or try to contribute interesting experiences with their own gestures and body techniques; but either way, they always already do both. Says Briand, “The body displaces itself in search of different visions of space, and the vision displaces itself according to the individual’s connections in the space” (Sensorium 54).

The “multiple perspectives,” which are “constantly on the move in the context of a complex transformation” (Hasegawa 51), elicit an embodiment and intercorporeality that “superimpose, merge, slip, from one to another. It is in this way that they form and evolve”

(Briand, Sensorium 54). Here, Briand asserts, “movements are driven by a will to share or not share” individual activities and sensual experiences, and also “by the capacity of a group to organize itself in a way that they can all access all possibilities” (Briand, Sensorium 55).

Yuko Hasegawa contends that Briand’s participants experience a “dispersal of the subject” (51); I’d argue that, more precisely, they experience embodiment as it is: dispersed, enacted, entwined, interfered, differentiated, shared and continuously performed in its connections. Touched, and interrupted. Sys05 asks us to incorporate not only an embodied looking – one that challenges the very possibility of the disembodied eye of the Renaissance discussed in Chapter 2 – but a socially constituted mode of embodied perception. It is, in fact, an inherently embodied, and inherently *social* perception. Any participant’s movements in space – where they navigate their bodies or turn their heads to look, for example; when and where they click the button-swapping feeds or plug in to the interconnecting audiovisual cables – contribute to the larger system and to other active participants, which guide their own performances, again.

In Sys05, our dynamic and embodied activities – body techniques – also make up the parts and rules and very being of a larger social system, the context and the backdrop of our activities – intercorporeality. The artist contends, “The audience will exchange what they see with others and influence what others see through the connections”; Sys05 “transforms... social functioning” (Briand, Sensorium 54-55). Here Briand has created a potentialized context that intervenes in the experience of “body” as and with “bodies.” Society and perception are both embodied and emergent, processes and performances, inter-active sensible concepts, that he re-situates within a technological rig that asks us to look, again. Sys05 uses interactive connections between participants to highlight how those very connections govern our behaviour, in turn shifting the connections themselves. Here a micro-society interrupts the process of embodiment; embodiment interrupts the constitution of said micro-society; and these interruptions are precisely the co-emergence of both.

6.4 Scott Snibbe

Award-winning digital artist Scott Snibbe believes that “human mental structures and processes, including languages, ideas, memories, and preferences, all emerge from our interactions with other individuals and society”, and he hopes to “portray this interdependence of individuals with their environments and with each other through bodily

interactions” (Snibbe, Statement). Echoing the ideas presented in this chapter and dissertation at large, Snibbe asserts that the view he holds “of interdependence and emergence has gained widespread contemporary support in the fields of complexity theory, social psychology, and network theory” (Statement). His work engages embodied cultural materializations of / with society as always, both, implicitly co-emergent and explicitly ‘together.’ He is therefore an ideal case study with the *Social-Anatomies* thematic.

Snibbe says that his work explores how “seemingly independent phenomena are, upon analysis, actually interdependent with their environments” (Statement). No object, whether “physical or mental,” he asserts, can exist “in isolation from the rest of reality” (Snibbe, Statement). His art works “do not function,” he says, “unless viewers actively engage with them - by touching, breathing, moving, etc. – so that viewers are essential to the work’s existence as art” (Snibbe, Statement). And although they utilize “state of the art technologies, viewers’ experiences more typically occur in the realm of human-to-human interactions.” Snibbe aims to “provoke communication among the viewers that, more than a mere reaction to the work, becomes the very essence of it” (Statement). In other words, person to person – or rather body to body – communication, physical inter-activity within the embodied social order, are at its core. His art works intervene in the relational feedback loops between embodied enaction and the emergence of societal norms and conventions.

Snibbe’s “artistic process is rooted in his training as an experimental filmmaker and animator” (Snibbe, Statement). In his work, viewer interactions either create visual representations of their relationships to other bodies in real time, or else leave remnants of their embodied participation for future interactors to explore and engage with. In accordance with “the principles of phenomenology – the philosophy of how the body ‘thinks’ through unmediated perception, rather than through reason and language,” Snibbe attempts to give us ““at every moment a global, practical, and implicit notion of the relation between our body and things, of our hold on them”” (Snibbe, Statement).¹⁷⁰ Here it should be clear that although he uses representations of the body in his work, Snibbe’s interests lie in affect, experience and relationality, in the body-schema and in a sense of re-presentation that is similar to Nancy’s understanding. He believes that in “interactive work... the process is the product” (Simanowski and Snibbe). What you do “is what you are creating – completely intertwined and inseparable” (Simanowski and Snibbe).

¹⁷⁰ This is an unreferenced Maurice Merleau-Ponty citation within Snibbe’s original text.

Snibbe sees the body and its parts as defined through their interactions with social conventions, which are fed by both these activities and our communal understandings of them and their implications. "The line between you and someone else" he says, "is the relationship, constantly changing" (Simanowski and Snibbe). For example, he talks about a thought experiment he often played when he was young, with regards to his hands, and it is worth quoting him at length in order to convey his process of thinking (essential to his work):

if you look very closely it's impossible to find the border between the hand and the arm. You can't identify one cell that is 'hand' and one right next to it that is 'arm'. Since this is certainly so (I've asked many a biologist since then), it calls into question the very existence of the hand. If you can't say where it begins and ends, then can you really say it exists at all? Of course you do have a hand – it can pick things up, pat someone on the back, and so on. By its conventional function we can label it a hand – the word really refers to the functions performed by the hand, rather than any intrinsic 'hand-ness'. And of course the hand is only made of non-hand elements – skin, bones, blood, hair, etc. The hand isn't the sum of the parts, nor is it any single one of them.
(Simanowski and Snibbe)

This understanding of a body in 'parts' which are not actually parts, a hand or body which can neither summarize the whole nor be represented by its modular pieces, is not dissimilar to Jean-Luc Nancy's 'people,' discussed in Section 5.1. Our comprehension of both 'hand' and 'people' comes from their relational inter-activities with everything else; hand with body, body with bodies, and people with (other) people. Each is defined by its performative actions, its ongoing contact and differentiation.

Snibbe's first full-body interactive work, *Boundary Functions* (1998, see Figure 27, page 157),¹⁷¹ is an exemplary intervention in the co-original relationships between body and society. This piece literalizes the fine line between publicly constructed and personally constituted space, between "you (plural)" and "me." Here Snibbe uses a bird's eye view camera and data projector above his participants, throwing animated lines onto the floor below them. Basically, as his audience members cross the threshold onto the interactive platform, the work draws and projects a real-time Voronoi diagram around

¹⁷¹ Video documentation online at <http://snibbe.com/scott/bf/index.htm>

them. No matter how many people are present (and moving) in the installation, each gets a partition of exactly the same size: mobile lines that continually separate them. If no one is on the platform, the projection is deactivated, and we see nothing. If one person strays into its clutches, again, we see nothing. But if two people are present, a line separates them, no matter where they both move – it dynamically changes to keep an even distance between them. Three people, and we begin to see complex shapes emerge, cellular in their structure; four people produce smaller and faster moving cells around them; and so on, with as many people as can fit inside his interaction area. The math here is such that all space within any given cell “is closer to the person inside” it than to any other person on the outside (Snibbe, BF), all of them effecting, and affected by, how the piece, and its pieces, move.

With *Boundary Functions*, Snibbe intervenes in our emergent categories and understandings of ‘personal,’ ‘space,’ ‘me’ and ‘mine,’ ‘you’ and ‘yours,’ ‘us’ and ‘ours’. He literally puts an animated box (symbolic quotes) around our “bodies”; the Voronoi diagram is continuously defined by where we move, and we move in relation to that very same image, and more importantly, the bodies that move it – including our own. ‘We’ and ‘I’ and ‘you’ and ‘us’ are performed in the embodied relation between our playful interactions with one another.

Snibbe describes how “the first reaction of everyone is to step on the lines that are drawn between themselves and the other people on the floor” (Simanowski and Snibbe). These immediately jump away from them, and that response “adds energy to the space, creating a social stirring” (Simanowski and Snibbe). People chase each other, and the lines that separate them, move away or dance about in unison. The artist avers that as his participants “start to contemplate the meaning” of the piece, they think through how the lines are defining their “personal space” in real time (Simanowski and Snibbe). Role playing one of his own performers, Snibbe goes on, “But it’s only defined by others and changes without my control”; my personal space “doesn’t even exist without my relationship to others”; it is “purely defined by an intertwined social relationship to others” (Simanowski and Snibbe).

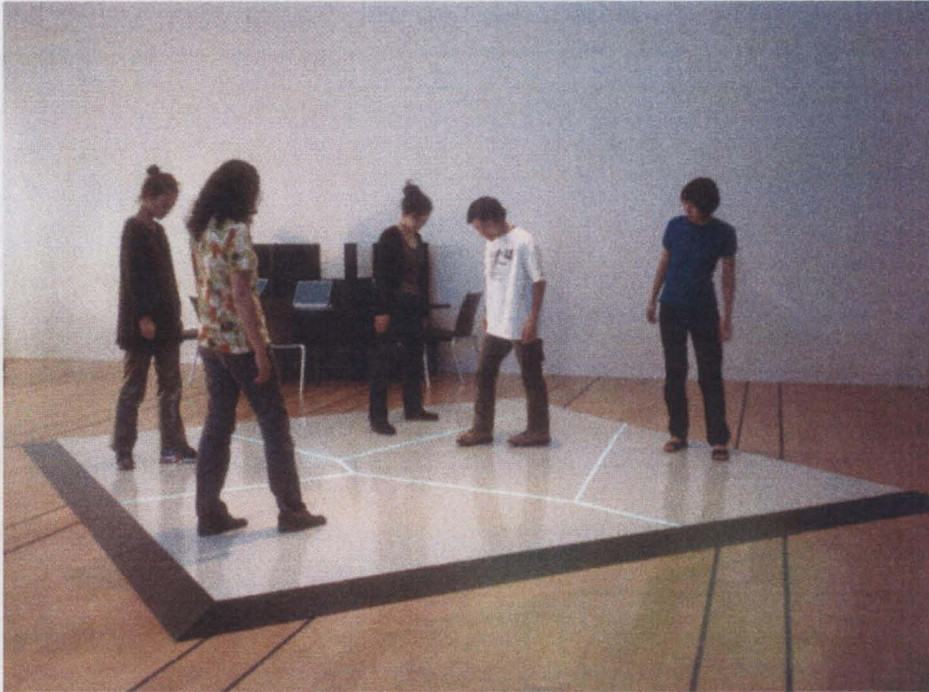


Figure 27 *Boundary Functions* by Scott Snibbe, 1998
Interactive Installation and Software, dimensions variable

Snibbe says his initial inspiration for *Boundary Functions* came out of a desire to reveal how we relate to one another, how we define ourselves and the physical space of our bodies through, and with, those around us. He wanted to turn the “invisible relationships between individuals and the space between them... visible and dynamic,” to make the “intangible notion of personal space and the line that always exists between you and another... concrete” (Snibbe, BF). When the artist witnessed his audience’s encounters with one another whilst using *Boundary Functions*, however, his revelation of their relationships wound up changing the relationships: participants immediately want to use their bodies to trap or destroy or trick the piece and what it re-presents. It was after seeing his own creation in action that Snibbe began referring to himself as a “social artist” -- given that he doesn’t just reveal, but actually affects, social behaviour.¹⁷²

Here, ‘my body’ is understood only through its activities in relation to other bodies, through its body techniques and intercorporeal connections. Snibbe intervenes in our activities and enfolded understandings of all of the above, and invites us to engage, through passivity or aggression or playfulness, with how we play out our social and embodied relations. We relate with and through the movements of our own and other’s bodies, incorporating and constructing a system that lives only through those very same

¹⁷² Quoted from Snibbe live at a panel discussion at the Milwaukee Art Museum, October 3, 2008

movements. This system is activated only through activity – through individual body techniques – and these gestures in turn call for more movements in order for said system to carry on: intercorporeality. Here the implicit body framework highlights interactivity not only as the ‘work’ but as embodiment itself; and the Social-Anatomies thematic couples embodiment with the emergence of society, society with the emergence of the body, in a way that understands each not only as relational, but as a moving, sensible-concept.

Snibbe’s later work is cinematically-inspired, and plays with the languages of film, animation and shadow-puppets to create game-spaces where social rules and bodies in motion inter-act and co-emerge over time. In each, as the following discussion will show, we per-form body and bodies, enact communal rules as societal structures, and intervene in the body techniques that are governed by, and help to constitute, intercorporeality. Many of the pieces considered here were featured in Snibbe’s 2005 solo exhibition *Shadow Play*, at *Art Interactive* gallery in Cambridge, Massachusetts. Specifically, I will analyse his *Screen Series* (2002 – 2003) and *Deep Walls* (2003).

In all of the installations in *Shadow Play*, Snibbe uses his viewer-participants’ moving shadows as flat and iconic re-presentations for body and self. In a carnival-like environment with many interactors and onlookers, these shadows become characters that interact with one another, with cartoon-like geometric shapes (re-presenting projected screens themselves) or real-time drawings, as well as with other people’s shadow-selves that are being or were previously captured. In his *Screen Series* (see Figure 28, page 160),¹⁷³ viewers find themselves in simple and linear relationships with image-based objects on screen. Each work “initially presents an identical premise: an empty rectangle of white light projected upon a screen.” Here the rectangular projection already has social implications: it references the filmic screen and digital image and all they represent to us culturally and historically. When viewer’s “move between the projector and the image, each work reacts to their bodies” (Snibbe, BSS). Participants each embrace the already familiar and embodied prosthesis of their shadows as a relational agent that inter-connects them with screen and with cinema, with the underlining narratives, meanings and histories that screen and cinema bring to bear. Here they bring a cultural and social understanding of media, image and body to their performance.

In *Shadow* (2002), for example, the projector acts like a simple spot light, and any given viewer’s shadow falls upon the screen. What this performer may be unaware of is

¹⁷³ Video documentation online at <http://snibbe.com/scott/screen/index.html>

that Snibbe's software begins recording their shadow and movements as a digital video as soon as they have entered its interactive domain. When the viewer steps away, "the screen replays the movements of their shadows over and over, so that their shadows are detached from their bodies"; these videos "become a recorded performance for a larger audience, and the work is revealed as an instrument for composing cinema with one's own body" (Snibbe, BSS). In *Shadow*, our embodied performance in front of the screen is archived as a visual story, an ongoing artefact, to be seen and responded to by us, or by other viewer-participants in the space.

Snibbe's *Screen Series* continues, from here, to build on this basic premise of coupling body-as-performed with a public, and constantly transforming, artefact. In *Compliant* (2002), for example, our shadows cause a small projected rectangle/screen "to be distorted and pushed away, as if the screen were a rubber sheet" (Snibbe, *Compliant*). Inspired by Charlie Chaplin's hat in *The Tramp*, Snibbe gives this 'screen within a screen' a sentience, a "dynamic, reactive and frustrating personality" that is not unlike Peter Pan's shadow running away from him (Snibbe, BSS). The rectangle's edges bend and ripple and slip away when our shadow-fingers push or grab its form. Snibbe sets up a quirky interplay that gestures – and asks us to gesture – towards the structures, forms and games that bodies make, and the bodies that structures, forms and games make. We and the social space of his screen become entwined game-players and rule-makers, involved in a kind of narrative-driven community which is per-formed by multiple bodies over time and space.¹⁷⁴

There were six pieces in all to Snibbe's *Screen Series*, and the interactions ranged from leaving behind animated silhouettes or distorting screens, as in *Shadow* and *Compliant*,¹⁷⁵ to collaborative and moving shadow drawings between several participants (*Impression* and *Depletion*, both in 2003) and interactive games of 'tag,' where projected light illuminates the shadows of the 'it-person,' and is transferred between them when their shadows touch (*Concentration*, 2003).¹⁷⁶

¹⁷⁴ The use of iconic images, the filmic language, and narrative, all point towards the potential for a similarly productive reading of Snibbe's work within the Body-Language thematic.

¹⁷⁵ *Shy* (2003), not shown in Figure 28, is a work very similar to *Compliant*, but Snibbe creates a more animated, anthropomorphized character in the moving screen – in addition to manipulation, it quickly jumps, shirks and cowers away from real-time shadows. See Snibbe, *Shy*.

¹⁷⁶ See Figure 28 on page 160 for stills from each piece, or visit <http://snibbe.com/scott/screen/index.html> for video documentation of the whole series.

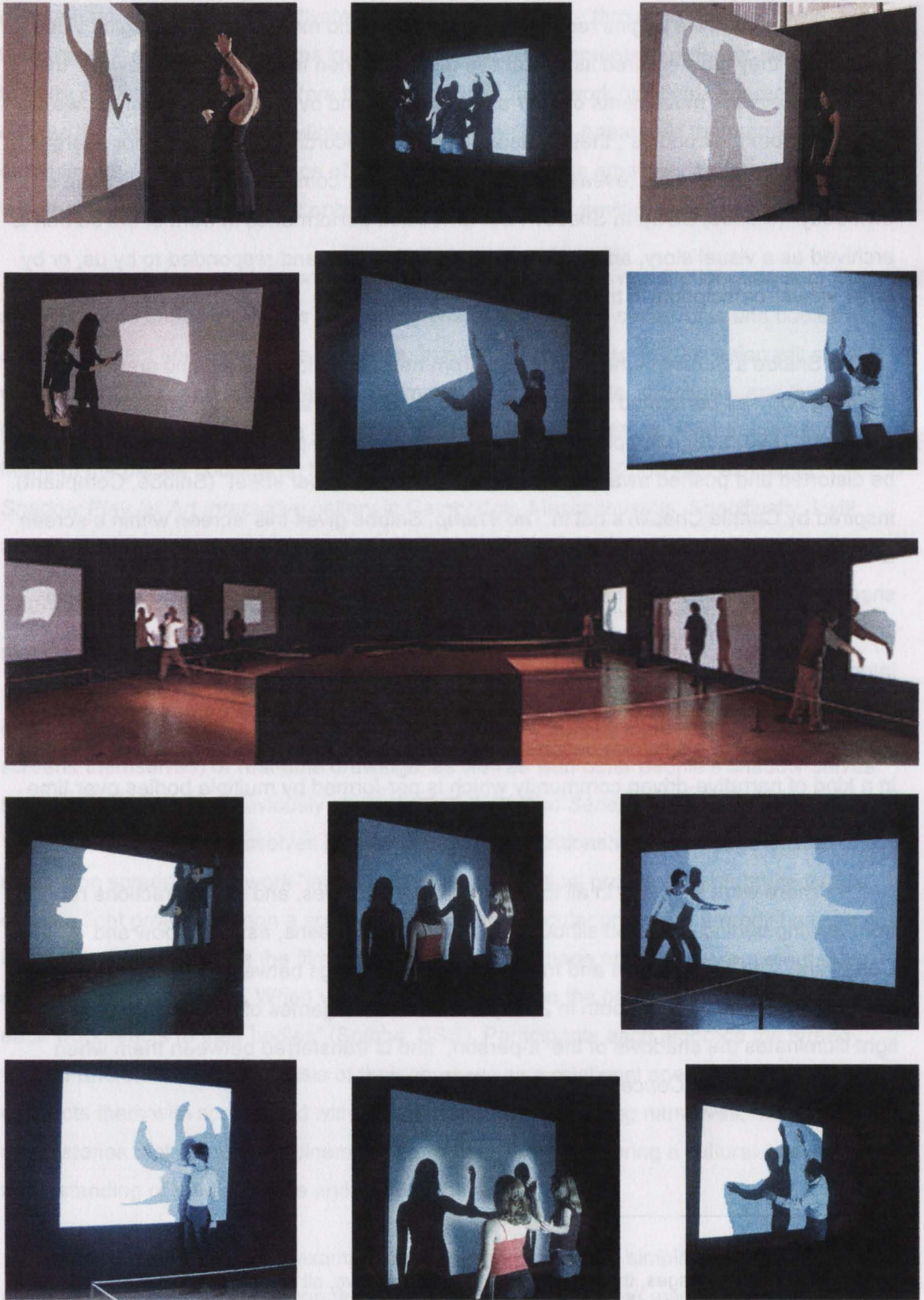


Figure 28, Screen Series by Scott Snibbe, 2002-2003: Shadow, Compliant, Impression, Depletion, and Concentration
Interactive Installations and Software packages, dimensions variable

In an interview with Roberto Simanowski, Snibbe talks about how he's watched people engage with his work in the gallery space. Some of them, with *Compliant*, for example, "passively stood on the side, appreciating the quality of the light and screen itself without realizing the reactive potential of the work" (Useless Programs). But others both actively participated and / or preconsciously reacted to its forms. One woman "reflexively stepped back" when "the screen pulled away from her body" at first encounter (Simanowski and Snibbe). After understanding and acclimating to the rules and exigencies of the experience, she engaged with it intimately,

gracefully waving her fingers on the edges of the distorted rectangle, tickling the frame and, later, sticking out her tongue to make small dimpled impressions into the its edge. Long after she had departed, and the rectangle had returned to its initial form, a man quickly glanced at the piece, then, strode purposefully through the projection without looking back. Behind him, the luminous rectangle shuddered and jerked away, distorted from a clean rectangle into the warped form of a fallen tissue. (Simanowski and Snibbe)

In *The Boston Globe*, Cate McQuaid asserts that the format of Snibbe's work "invites drama: one person might make wild gestures; two people could act out a pantomime" (McQuaid). Playful interactions by each individual in the space feed into how current and future interactors decidedly engage. Here the body both inscribes and incorporates how itself and other bodies, and Snibbe's body of work, did, does and will perform over the course of an exhibition.

Snibbe's *Deep Walls* (2003, see Figure 29, page 164),¹⁷⁷ also exhibited in Cambridge and perhaps a culmination of this type of work, invited viewers to play with each other's shadow-bodies over time. This piece basically multiplies the interaction of *Shadow* into a grid of 16 individual boxes. When in between the installation's projector and its projection, viewer-participants cast their shadows over the latter, "obscuring part of the grid, and a camera captures and records any movement they make while in the frame" (Polk). Once they leave the frame of light and their shadows are no more, "this recording is projected and replayed in a single box, looping indefinitely alongside clips of other participants' silhouetted actions that play in adjacent boxes" (Snibbe, *Deep Walls*). In other words, every active performance snippet in front of this non-linear, cinematic

¹⁷⁷ Video documentation online at http://snibbe.com/scott/mosaics/deep%20walls/deep_walls.html

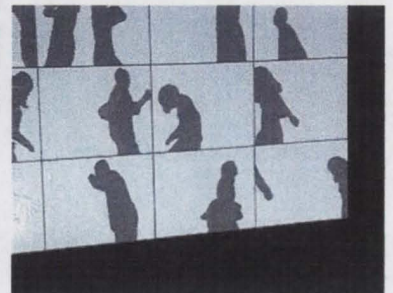
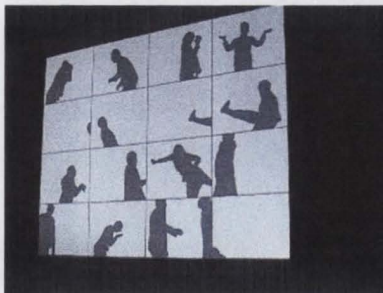
narrative is stored in one of its comic book-like squares, replacing an animation that was there before.

Deep Walls invites an even more collaborative and physical investigative production of the work than do any of its predecessors. Here each shadow-body has 15 or more collaborators in its grid (more when groups of people work together on one cinematic snippet). These performers often try to outdo each other, throwing their children in the air before catching them, kissing or dancing or interacting with one another or other boxes on screens, doing cartwheels or whipping their hair or sometimes even playing out familiar scenes from movies of old (I saw several attempts at *Indiana Jones* and *Casablanca*¹⁷⁸). The accompanying images in Figure 29¹⁷⁹ might intimate iconic iPod advertisements with its stark silhouettes or allude to graphic novels that move linearly through time and space. But we also see a complexity of narrative imagery that emerges in a more mobile, physical and non-linear fashion as each individual interaction feeds into the whole, and into future performances. Some inter-actors glide past, others run or dance and shake their heads and hair, still more try to work together within a frame and perform deeper meanings into the micro-narratives of a given square – which may or may not contribute to the whole in the ways they initially intended. Here the artefact of the screen is a social space of embodied collaboration.

This section argues that given the open space of the gallery – with a nod to Nicolas Bourriaud – the performances in Snibbe's work are always shared. Once the first audience member participates in *Shadow*, for example, we each watch the films by previous inter-actors before playing our own role, and build on or respond to them; and we are fully aware that current and future gallery-goers will see and engage with the animations we ourselves leave behind. We interrupt an ongoing body-film, and that interruption is the productive transformation of both our said bodies and the social structure asking us to perform. The artefactual screen story is both what we, as bodies, contribute to, interact with and change, and also informing what and how and why we contribute / interact. In our interaction, as we produce the work with our shadows, our body techniques are always already pre-consciously aware of the culturally constructed understandings of how our shadow-movies might be read. And we pass on traces of our bodies as part of an ongoing intercorporeal narrative. This is most evident in *Deep Walls*.

¹⁷⁸ At the *Act/React* exhibition at the *Milwaukee Art Museum*, over several visits between September and December of 2008. See my review of the show in Stern, ARP.

¹⁷⁹ And video footage at http://snibbe.com/scott/mosaics/deep%20walls/deep_walls.html



*Figure 29, Deep Walls by Scott Snibbe, 2003
Interactive Installation and Software, dimensions variable*

Shadow Play's curator, Mary Polk, explains that in *Deep Walls* the "pictures of our shadows remain – copies that, though reduced in size, otherwise bear a precise resemblance to the original" (Shadow Play). Despite this resemblance, they are "twice removed from the body" (Polk). They no longer work "indexically – as imprints of the body, a mark of presence, but iconically – as products of artifice, an indication of absence" (Polk). While artefacts of the past, of those who have passed through the space, the shadows are "nonetheless linked to the present" (Polk). The grid of the screen encompasses many frames without itself having a frame (other than the live shadow-body of the current player). As such, "the screen space seems to extend into the viewers' space, establishing a sense of continuity" (Polk). Here is the partnering between body and screen (as a cultural artefact), body and bodies, body and society; the 'work' is, engages, intervenes in, and emerges as, *Social-Anatomies*.

Snibbe successfully underscores "the essential role of the audience in the realization of his artwork" (Polk). And he says of the work that "by collecting the viewers' own shadows, the piece reveals how individual objects gain in symbolic meaning, while losing literal meaning, through organization, repetition and display" (Snibbe, *Deep Walls*). *Deep Walls's* performers move and re-move, participate and re-member, their own bodies along with the organizing, re-moving and re-membling bodies on screen. This loop of action and reaction, participation and social production / constitution, continuously feeds in to what any interactor does, which is then captured and fed in to the larger organization (both as noun and verb), again. The audience, both implicitly and explicitly, constitutes a 'people' or community – in Jean-Luc Nancy's sense of the words – a (micro) culture or society, through its en- and unfolding structure. This structure is an intercorporeal backdrop to our interactions, to our body techniques, which in turn makes up the structure itself. In *Deep Walls*, we are creating an embodied and dynamic relational community within a greater, collaborative community; 'we' develop a narrative of social reciprocity with and through not only the body, but bodies.

The plurality of bodies in *Deep Walls* makes up a kind of social artefact as relational activity. It is an inter-active sensible concept that re-situates a co-original and multiply embodied society and / with / as cultural artefact. Snibbe, in other words, intervenes in 'we': the past, present and future of a continuous and embodied 'us.' Our (inter-)activities, how and what and why they are, and how they themselves govern how and what and why they are, are put in quotes. Snibbe, Like Featherstone and Turner, asks us to engage not only what a body is, but how it is, and how it is in relation to others,

to society, to culture. He asks us to question “social,” “anatomy,” how our anatomies are social, and how society is, itself, an anatomy.

The following chapter relates my own practices as an artist, and role as a researcher and writer, to the work, research and ideas presented in this dissertation. It is itself an attempt to intervene in the processes of art-making, researching and writing, through a kind of fictionalized story about the materials and relationships (and material relationships) that fold in to all of the aforementioned processes. It aims to bring to the fore the inscribing and incorporating practices that led to, and came/come out of, this dissertation’s per-for-mance. Chapter 7, “In Production (A Somewhat Autoethnographic Experiment),” is an/other approach to understanding interactive art through embodiment and embodiment through interactive art.

...and ...

...and ...

...and ...

7 In Production (A Somewhat Autoethnographic Experiment)

7.1 Introduction to an Experiment

On the balls of my feet, I involuntarily hover in the doorway to my supervisor's office.

"Was there something else you needed?" Linda asks me, not even turning to face me from her computer. I want there to be. I rack my brain for a second, trying to think through how to voice my anxieties, before I finally summarize them with two simple words:

"I'm scared." My tone is surprised; the words come out along with a laugh. And it isn't a nervous laugh; I find my fear funny. And it isn't even real fear; it's academic fear. In both my personal and professional lives, I've done and endured far worse than simply exiting my comfort zone whilst researching and writing a paper. Hell, this isn't even a paper; it is one chapter, in a larger dissertation, which is – if statistics are any indication – unlikely to get published anyhow. "I don't know if I can do this."

Linda turns around to face me. It's hard to read her expression. I had only left her office minutes ago, after convincing her that an 'autoethnographic narrative inquiry' is the best way forward for the chapter on my own art, to bring in that aspect of my work and research that is itself material process. I want to find a way to show the application of the implicit body approach – understanding interactive art through embodiment and embodiment through interactive art – in production; to illustrate the connections I made, while making art in the studio, that led to the thesis in the first place (though this is all, of course, very chicken and egg). It's for working artists as much as it is for critical thinkers. I had arrived with a stack of books and articles and notes, and outlined an argument for her, tying together institutionally recognized artistic practices, action research, self-reflective design, feminist epistemology, with dashes of performance studies, phenomenology and embodied praxis here and there for good measure; then I had looped it all together into how to produce the most dialogic text around my arts and research methodology (in something which is its own writing methodology). "I need," I'd concluded, "to be completely present if I'm going to show how this kind critical thinking can be applied to critique, reflection and production. And I don't mean that I will simply be writing as a subjective I," I had asserted – that wasn't enough – "the art-making process needs to be detailed, on a personal and evocative level, so that readers can extrapolate and imagine their own potential implementation." The finale to my monologue was my handing over a

copy of Carolyn Ellis' *The Ethnographic I: A Methodological Novel about Autoethnography*.

"Oh my god," was Linda's initial utterance after reading the first page or two. The book begins in a completely casual and autobiographical literary style, with Ellis emphatically, and empathetically, telling a potential graduate student and cancer survivor that of course she *must* let her experiences not only 'get in the way' of her research on the disease, but inform and guide it at its core. It will anyway, Ellis says in so many words, so why not be honest and transparent about it? The text will be far stronger for it, she argues. This is diametrically opposed to what most students in Linda's department are told.

Professor Linda Doyle is a telecommunications engineer, who occasionally takes on artists for PhDs. She likes to shake things up a bit, and sees inherent value to bringing artistic and design practices – not to mention creativity – into usually rigid scientific fields. And she also likes artists that are fearless when it comes to technology, and I (mostly) fit into this category. Sometimes her engineering background means she is wholly pragmatic about getting from point A to point B, and that's been extremely helpful in my learning how to write more like a traditional academic for 7/8ths of this dissertation (give or take). An added and unexpected bonus, I learned only after enrolling at Trinity College, is that Linda has little to prove when it comes to the validity of what she does within the academy – as many in the arts, in all fields, do – and so is herself fearless when it comes to going out on a limb and pushing, sometimes obliterating, boundaries.

From the first time I met Linda, we agreed that my role as an artist is, will, must be present in my research; by the time I arrived at Trinity, I clearly saw artistic practice as research and my writing as inseparable from said research.¹⁸⁰ But I never imagined I would write about my own work in the final text. That idea, not without its own heartaches, was all Linda's; her engineering students are required to write about their own work, why wouldn't I be? Colleagues and supervisors in arts departments at our and other local

¹⁸⁰ Here, I'm reminded of a chapter by Elaine Bass Jenks, in the edited collection *Ethnographically Speaking: Autoethnography, Literature, and Aesthetics*, edited by Ellis and her husband, Art Bochner. In Jenks' "Searching for Autoethnographic Credibility: Reflections from a Mom with a Notepad" – where the author is studying a group of visually impaired children, including her own – Jenks continuously reminds herself and the reader that "My mom role was always present.... My self image as a mom affected my study as well.... And as a researcher who is a mom, I believe I expend more energy researching a topic that affects my child than I would if I studied a more distant 'other'" (Jenks 180-181). My own role as an artist relates to my roles as writer and researcher in the same way. I am always playing all of these roles at once, but I expend more energy on given texts and analysis if they affect my practice as an artist as well as writer.

institutions, however, called this a “huge mistake,” “unacceptable” and “implicitly lacking rigour.” I imagine they’d cringe at the format we finally agreed on.

But I honestly never expected her to go along with it, never thought it *would* be agreed upon. Write about my work, sure, but write about it creatively, autobiographically, with unfolding tensions as opposed to academic assertions? Sounds great to me, I admit, but I didn’t actually think my PhD supervisor would think so, too. And now that Linda *has* agreed, rather feeling than elated, I feel uneasy, exposed, up the creek.

Am I even capable of this? What’s the narrative arc? Why should people care? How far do I go back – to when I first started making art? Do I begin with my personal motivations or my academic curiosities? These are now inseparable for me, but I know I hadn’t always understood them as entwined. And perhaps, most importantly, aren’t the criteria that are meant to help us judge if autoethnographic text is ‘working’ and accomplishing its academic goals pretty vague? Ironically, all the arguments *against* autoethnography, all the points refuted so eloquently – and practically, using the autoethnographic style itself – by Ellis and Bochner and Denzin and countless others I had been reading over the preceding weeks, come flooding into my mind. And Linda sees it in my eyes, in my precarious doorway hovering.

Her response is twofold. She points at a chair for me to sit down again, and while I oblige, she starts with the academic and pragmatic side of things.

“You’re really far along here, Nat.” Her voice is just above a whisper, as if she doesn’t want the neighbours, office neighbours that is, to hear. And she also purposefully calls me ‘Nat’; only my family and other people who have known me for well more than a decade – as a teenager, even – call me Nat, rather than Nathaniel. Linda doesn’t fall into this small crowd, but has met my family, seen ‘Nat’ in action, and is probably trying to make me feel more at ease. “You could always edit, re-write or cut this if we agree you have to. You have more than enough traditionally rigorous academic text in the rest of the dissertation and certainly enough time for changes. Yes, you are walking through a minefield of controversy in several different disciplines. No, it may not be worth it, given how small a percentage of the writing is about your own work. But it may very well wind up being one of the major contributions your research and text have to offer.”

This takes a few moments to sink in. I am not sure I want that. This dissertation is way bigger than me and my practice. If I didn’t believe that I had something to offer in a comprehensive theoretical text, if I thought that my ‘biggest contributions’ were available

only through my art – even if that included practice as well as the fruits of my labour – I would not be doing a PhD. Linda pauses briefly, then goes on as if reading my mind, with the more personal and second – but not secondary – response.

“This is so *you*, Nathaniel,” she starts. “You are an artist and a writer. That is your practice and your research, and the two are one and the same. You are a storyteller and interrogator who works in and with many forms. Although the engineer in me wants to find a way, you simply can’t have the results of your multimodal explorations only represented in and as argumentative writing.¹⁸¹ All your hand-waving and excitement, the things which made me want to work with you in the first place, are themselves embodied through narrative voice and movement and activity. This is exactly the place where your thesis comes from. This is why your critical methodology includes looking at movement itself: Body-Language,” she laughs with the last four syllables, but then goes on after a half-second pause, and with a more serious tone.

“I’m not that comfortable with this style of writing either. I think you have amazing courage for trying. I don’t know how it’ll fit, how it’ll work, if the University high-ups will be OK with –” Linda shakes her head and waves her hand as if swatting that idea away. My mind wanders to a paper I read recently, where the author notes the accepted practice of “experimental discourse” and writing for “respectable, established” academics, but never for “graduate students writing dissertations” (Spigelman 68).¹⁸² I already know Linda and I both agree this is worth trying.

We both think for a long minute, and then I get an unexpected rush of energy, picking up where I left off. “It’s really just a chapter on one of the many avenues of my research practice – and, more importantly, the implicit body approach, albeit towards a slightly different end – and how it feeds back into itself. That’s it. If I make,” I loosely hold up my pointer finger in front of me,

¹⁸¹ This reminds me of a discussion between Ellis and her partner, Art Bochner, published in the special ‘autoethnography’ issue of the *Journal of Contemporary Ethnography* in 2006 – a discussion that will be referenced again later in this section. Ellis asserts, “I don’t want to write in an argumentative style – you know, the ‘here’s what’s wrong with what you say, you don’t understand my position, mine is better than yours’ kind of writing.... Point-to-point refutation has never changed my mind; it certainly has never changed what I feel in my heart” (Autopsy 434). Also see “Being real: moving inward toward social change” (Ellis).

¹⁸² There are, despite this, a number of autoethnographic PhDs – or sections of PhDs – that have indeed been written; these are mostly by students of the aforementioned – and other – advocates of the form, but also include professional and managerial practices, as well as researchers in the field of art education. See, for example, Boucher and Smyth.

“**One**, a concrete argument as to *why it’s there*: to show the ongoing development and understanding of interactive art through embodiment and vice versa, but in arts production rather than criticism. To reveal my arts methodology as per-forming, as in birthing, the implicit body approach/framework itself; to show that while I am making art, I am engaging these emergent materials and ideas, trans-forming them through their relation to one another; and,” I flip out my second, middle finger along with the first,

“**Two**, *why an autoethnography* is most befitting: because everything in the dissertation is about material process, critical inquiry – artistic and embodied or otherwise – and affective evocation, and how they are all co-original and, you know, *with*,” I criss-cross my two-fingered and opened hands several times to illustrate that last word, “then it’ll be hard to refute, whether my readers – or whomever – likes and agrees with the style I’ve chosen or not.”

We both breath in, purse our lips, then breath out at the same time. We look at each other and laugh awkwardly. I close my eyes for a moment to think: this is going to be really difficult. I open my eyes and continue, more slowly.

“I just have to get across that while my writing and making are entwined *practically*, the best way to re-present them and what they each accomplish *in text*, in the *dissertation*, is by very different - and thus also obviously separate – means.” I’m silent for a brief moment, then add, “It also has to be clear that this is still the implicit body approach, if not the framework; it simply flips over the critical reflection from viewers and critics in the gallery space to the artist, me, whilst the work is in production in the studio. I’ll narrativize how each work leads to the next, in that quirky and creative way you seem to so enjoy, but stress that this is in fact examining both production and reflection with the same critical thinking as the rest of the text, thus adding more insight into embodiment and interactivity.” My next statement is almost a question, my American roots creeping in as a rising inflection at the end: “I’m just trying to find the most ideal way to inscribe my various incorporating practices?”

Another pause. I sigh, and my supervisor half smiles / half grins.

“I think you can write this,” Linda answers firmly. “I think you can make this interesting, and make all your points within the narrative.” She nods, almost to herself. “But I also think you have to convince Nicole that it’s the right way to proceed.” I raise my eyebrows. “If you can convince her, you’ll have convinced yourself,” she wisely finishes.

“And also me,” she attaches to the end a second later, with a bit of a rising inflection herself.

I get up to leave. “I don’t think Nicole will go for it,” I say as I walk out, but I’m happy we’ve agreed on a threshold test for our unfolding plan. My wife will give me a run for my money on this. She’ll save me from myself – and not for the first time, I laugh internally. Like I always say: Nicole’s the smart one; I’m the loud one.

7.2 Somewhat Autoethnographic

Nicole Ridgway, my sometimes collaborator and often-cited scholar in this very dissertation, is also my life partner. It’s mid-2008 and I’ve just walked into our tiny flat in Dublin; I’m doing that doorway-hovering thing again, so she knows I want to speak with her. Nicole puts her finger on her lips and nods towards our two-year-old daughter, Sidonie Ridgway Stern, napping in the bed, then gets up and follows me to the next room.

“I’m exhausted,” Nicole starts, as she sits down on the couch. There are boxes everywhere; she’s been packing all day. I’m trying to get a draft of the dissertation done before we move (again) and I start my new job teaching studio digital art in the Visual Arts Department at the University of Wisconsin-Milwaukee. She sighs. “Let’s not do this again any time soon,” she looks at me with a half-joking smile.

“What? Write a PhD? Have a baby? Move continents?” It’s the second time we’ve done that last one in less than 2 years. I sit across from her.

“Take your pick,” she says drily, looking out the window and not quite smiling. She then turns back to face me, and asks, “What’s up?”

With degrees in drama, performance studies and anthropology, Nicole knows a lot about the theories and practices I write about in the rest of this dissertation; and she also knows a great deal about those I’m putting forward in this chapter, many of which I myself have only become familiar with much more recently. “I’m thinking about writing an autoethnographic narrative for the section on my own work and practice,” I try to say stoically.

We read each other’s body language for a few seconds. I’m avoiding anxiety cues: I do a closed-mouth smile and tilt my head. And I can tell, through the way she looks up and bites the inside of her lip, that Nicole is going to give me a chance to explain, but her initial reaction is that this might not be the right way forward. I wonder if her connotations

for autoethnography are the same as mine. It's probably been a long time since she looked at the field.

"Alright," she says, looking at me squarely, making a plan in her head. "We'll get to the question of autoethnography in a minute..." My jaws tighten at the implied criticism, but I know that together we can work out what's best for my text. "There are a lot of other overarching issues you need to address before you can even begin talking about your own work, in whatever style you wind up using. You don't want to rehearse the same old debates around validity for arts practice, research methodologies, subjectivity, etc, but you still need to get them out of the way, bracket them off as recognized."

I knew this was coming; this debate is, I think, the easy part. Nicole had pointed me to a third of the readings I'd started with when embarking on this journey, and we both agreed – after Linda's initial encouragement – how important it is to include my art as part of the dissertation. In fact, she and Linda had said to me, both together and separately, that my role as an artist is one of the unique contributions I have to offer, what makes me stand out most from all the theorists I use to support my academic arguments. But she's right; I still need to address why I'm going here in a PhD dissertation.

"It's not about validity," I start, sounding more defensive than I want to. "We know it's valid; this goes beyond that. The entire text will be much stronger as an argument, as a study, as a model, if it includes writing about my own practice." This, I say with confidence. "My art led me to the thesis just as much as my writing continues to guide my work. And this section would also serve to illustrate the implicit body framework's value in self-reflective practice – *critique* in addition to criticism. Feedback loops for praxis. Implicit and explicit making and meaning-making. My practice – just as my art – is indeed a space for understanding embodiment through interactive art and interactive art through embodiment."

Nicole smiles a naughty grin. "Very poetic." Although born and raised in South Africa, Nicole's dry humour is 100% English; it appears often and in full force. "But you need to at least summarize the discourses out there, the longevity and clamour of some of the debates that, despite controversy, speak to the presence of artistic inquiry on the whole within the academic landscape. Practice is recognized in journals, PhD programs, for promotion and tenure. None of this has yet settled, which is why you still have to point it out, but it's available enough that you can show its acceptance by referencing just a few key texts. Where are you pulling that from?"

I realize now that Nicole just wants to make sure I can write my introduction to this section. On some level, she's giving it to me – although by the time my scribbles from this dialogue are edited and written into the text, it will all be my own thinking and words. For now, she just wants to know I've done my homework; or rather, she wants my eventual readers to know I've done my homework, and more importantly, who my predecessors are. Fair enough – I just had this conversation with Linda, so it's still fresh in my mind. That fact doesn't stop me from pulling out both my laptop and a stack of printed and hand-written notes; I start by paraphrasing from Jennifer Mason's first-year textbook on *Qualitative Researching*:

"I'd say the easiest place to start is with qualitative research more generally, and parallel it with arts production. Qualitative research is 'specific in some way to [a] particular research project,' and these projects tend to have problems that 'cannot be anticipated in advance.' Researchers 'need to develop active skills which include identifying the key issues, working out how they might be resolved, and understanding the intellectual, practical, ethical and political implications of different ways of resolving them'" (Mason 1).¹⁸³ I look up from my notes, "Sounds like what artists do, no?"

"So you're saying art-making is qualitative research?"

"I'm saying it's a form of research – and that it could be argued that it's qualitative."

"Well it's not *quantitative*," she smiles a very small smile. It's a nice smile.

"This, I know," I give a half-laugh. "But some artists would prefer not to lump what they do with qualitative research; they want to think of it as a completely different approach."¹⁸⁴

"What do you think about that?"

"I don't really care what you call it, as long as it's recognized as rigorous work. According to this book, qualitative researching promotes 'critical yet productive ways of thinking and doing' and asks its practitioners to 'think and act strategically in ways which combine intellectual, philosophical, technical and practical concerns rather than

¹⁸³ This quote, like many in this and the next (somewhat) autoethnographic section, is a combination of my own words, paraphrasing, and direct citation. In instances such as these, I will always include the reference and page(s), so readers have access to the author's original and full context.

¹⁸⁴ Those behind A/R/Tography, for example, mentioned later in this section.

compartmentalizing these into separate boxes'. Sounds like art-making to me. We just wind up with different outcomes" (Mason 2). I take a breath and smile with excitement. "You should see this huge book I found by Sage publications, an edited collection in its third edition, um," I fumble through my notes, "the *Handbook of Qualitative Research*; they have sections on narrative inquiry, artistic inquiry – though that's mostly for activism and community-based art in their interpretation – and autoethnography, so it feels like I'd be in pretty good company as a qualitative researcher" (Denzin, HQR; Chase; Finely; S. H. Jones).

"I see your point and I think it's a good one," Nicole starts, and I feel pleased with myself, "but arts practice is a different kind of engagement, a material one with very different goals and, as you say, outcomes – sometimes with *no* goals or outcomes, depending on who you ask what kind of work they are making. I think you need to look at arts production specifically, argue how its methods are attendant on the same co-emergent categories dealt with in and beyond your dissertation." She pauses. "In other words, it's not just your art works that encourage movement, but your arts practices as well."

"Yeeeeees," I say, taking notes with perhaps a bit too much enthusiasm. "And the writing is trying to reflect that. What I'm doing –"

"Actually," Nicole cuts me off, "I think the writing can do more than reflection and illustration, and we'll get there, but I'm not done questioning you about research yet, dammit," ending the last word with a grin. "What've you found about arts practice as research specifically? Did get that Graeme Sullivan book you found online?"

"Oh, yes." I pull out the Trinity library copy of *Art Practice as Research: Inquiry in the Visual Arts* and hand it to Nicole, then find my notes on it. "He's straightforward in saying that 'the imaginative and intellectual work undertaken by artists is a form of research.' He follows Elliot Eisner, among others, in saying that arts practice is a 'scholarly inquiry,' that, in common with more traditional forms of research, gives 'attention... to rigor'" (G. Sullivan xi-xiii).

"Good. And what about thinking and talking and crit? I'd argue that reflection into practice, on practice and about practice is a mode of theorization."

"Sullivan goes there a bit, following people like Donald Schön, and touching very, very briefly on something called A/R/Tography, which combines Art-making with Research

and Teaching, but since his book is itself a reflection on practice, he's more interested in practice towards an artefactual end, towards art objects, and legitimizing that on the whole. I'd say that action research and its later incarnation of reflective practice are probably closer to what you mean here, because they are often 'reported on,' in text form."

"Go on then," Nicole invites. I reach my laptop and find a few pages that I've typed up on the subject.

"What I appreciate about the model Ernest Stringer puts forward for action research is that he likens practice to a spiral of look-think-act-look-think-act- ad infinitum" (Stringer). I twirl my finger round and round in front of my face while I say this, and Nicole moves her eyes but not her head to look at it; she is trying not to laugh. I put my hand down, and go on. "It's more related to sociology, maybe ethnography, too, but has a kind of activist approach. It 'grew out of attempts to acquire knowledge that would help *change* social systems.' Given that, there also tends to be more of an emphasis on local contexts, rather than generalizable truths." (Candy, PBR Guide; Guba and Stringer xii)

Nicole nods slowly. "So," she says thoughtfully, "action research requires intervention; it impacts and changes the situation on a small scale, with large-scale implications. It could certainly be argued that your art does that, and perhaps some of your practice, when the two can't be separated," she says, referring to some of my more recent interventionist and event-based art. "But does your practice do that when you're alone, simply working on a new installation or print in the studio?" She raises her eyebrows.

"No, I'd say it doesn't. But Donald Schön's *The Reflective Practitioner*," I find the page with my notes on the topic and start reading aloud, "provides a link between action research and practice-based research. Schön is concerned with an individual's reflection on his or her own professional practice as distinct from the early forms of action research which were concerned with situations more broadly" (Candy, PBR Guide 19). I go on more conversationally "Schön himself calls self-reflective thinking an 'inquiry into the epistemology of practice;' he's interested in artists' and designers' 'capacity for reflection,' in studying our 'knowing-in-practice,' the 'actual performance' of what we do" (Schön viii-ix).

"Mostly, Schön wants to place value on how professionals work – the same value granted to academic researchers, if not more so. And he, at one point, goes so far as to

say that an awareness of this kind of – what he calls ‘intuitive,’ but I’d call embodied or material – thinking ‘usually grows out of practice in articulating it to others,’ in critical and ‘reflective conversation’” (Schön 243, 296).

Nicole is nodding when she asks, “So why not stop there? Why not just follow his lead on that?”

I don’t miss a beat: “Because, like Sullivan, while Schön wants to give credit to practice as research, in the cases he looks at, that practice leads to the production of a material project only, not an additional text. Ironically, it’s those practitioners in between Sullivan and Schön, the action researchers, who tend to do write-ups, who want to add to discourse through both art object-based and writer-ly – is that a word? – contributions.” Nicole does something between a nod and a shake that reads as ‘just-go-on’ in response to the tangential question, so I continue. “Schön wants the process to be seen as rigorous on its own, because of its outcome in the form of art or design – and I agree with his assessment entirely. But what I’m doing in this dissertation is writing out, or rather artistically playing out in text, that creative reflection and critical process in a kind of doubled gesture. This is also what’s different from the action researchers: I’m thinking in the making and then thinking again in the re-writing; each is its own feedback loop, as well as feeding into the other. I’m continuously re-citing and re-situating, if you will.” I smile with my improvisational reference to Walter Benjamin.¹⁸⁵ “On the extremely rare occasions where we get such a document or text with regards to self-reflective arts practices, it tends not to be the artists themselves who are speaking; it’s usually a very traditionally academic study by an outsider. The Schön book itself is a perfect example of what I mean.”

“Nathaniel,” Nicole’s tone changes from inquisitive to disagreeable. She was with me until that very last point about artist texts, and I realize I’ve gone a little overboard. “You know there are plenty of artists who write about their own work. You’ve read them: Joan Jonas, Robert Morris, Allan Kaprow, Marcel Duchamp, Mark Rothko, John Cage, Yvonne Rainier and Richard Schechner. Brecht and Peter Brook. Critical Art Ensemble, Eduardo Kac, Adrian Piper, Anna Deavere Smith, Eugene Barba. Rebecca Schneider, although not an artist in the way you’re talking about here, writes about her dream sequences and how they led to some of her ideas when exploring the explicit body in her own dissertation – a text which later became the book you reference so heavily with

¹⁸⁵ See Section 3.4 for more on Walter Benjamin’s notes on quoting as a re-situation.

regards to your implicit body approach. Sure, some of these practitioners separate their making and their writing, some of them mostly write to support their own work – in artist statements and documentation – but several do explore practice itself, and even describe what they do in narrative form, how they reach certain conclusions or projects. Augusto Boal, for example, writes exquisite stories on where he finds art and meaning.” Nicole stops here, kind of awkwardly – given her momentum of name-dropping – and waits for a response.

“You’re right,” I say firmly, with a nod. “It’s out there. What I’m doing is not completely unique; it’s just rare – especially within the academy, even more so in a PhD, and that tiny list gets even smaller when you consider my combination of personal narrative with academic text in this particular way. But no, I’m not alone, and I should be using my predecessors to support what I’m doing, rather than ignoring them.”

“Exactly.”

“But why I was going there,” I stretch out the ‘o’ in going, and add a sing-song bent to my voice, so as to lighten the mood, “was to differentiate between practice-based and practice-led research.”

“Why is that necessary?”

“Given how few art practice-related PhDs there are out there, I began doing a little research on how they are organized. One of the more interesting ones was in Australia –“

“I told you that,” Nicole interrupts with a brag, “they are doing some really funky stuff out there.”

“Ahem,” I say sarcastically and carry on, “and this is an important distinction to them. I bring it up because I want to show where I’d sit between practice-based and practice-led, and because both forms are recognized for a PhD, specifically.” Nicole looks at me intently.

“According to Linda Candy at Creativity and Cognition Studios, or CCS,” I restart with a slightly professorial tone and show her the printed out notes now in my hand, “If the research includes a creative artefact as the basis of the contribution to knowledge, the research is practice-based.... If the research leads primarily to new understandings about the nature of practice, it is practice-led” (Candy, Practice-Related).

“And you argue your research leads to both?”

“Yes. But it seems to be different from their work in other, perhaps more important, ways as well. Candy explains that in practice-based PhDs, ‘Whilst the significance and context of the claims are described in words, a full understanding can only be obtained with direct reference to the outcomes’” (Candy, PBR Guide). Nicole nods her head up and down, and I carry on, “This is true enough for the art work itself, the second half, but my writing in the dissertation is not there to ‘describe the context and significance’ of said work, it’s for the context and significance of the work specifically in relation to critique and criticism and practice, in relation to the thesis of the implicit body, in relation to understanding interactivity and embodiment, together.”

“So then wouldn’t it simply be practice-led? I see your point that your practice also leads to art, but the art is not included as part of your PhD, so this would just be considered practice-led by their standards.” After a beat, Nicole adds, “Right?”

“Yes. But I’d argue there’s another difference, an important one that the CCS doesn’t seem to address. You bring up that my practice *also* leads to art, to quote Candy, ‘the invention of ideas, images, performances and artefacts including design’”(Candy, PBR). I continue, “Here I am *writing* about my *own* process of making. And rather than attempt to take an objective stance on that like in practice-led research, or simply write artist statements and show the objects like in practice-based research, I’ve decided to try and re-present the two creatively, as a narrativized and localized – or rather contextualized – invitation into an implicit body approach to practice.” I call up the CCS page in my browser. “The practice-led PhDs tend to be critics or curators writing about artists in methodical, dense theoretical texts similar to the rest of my dissertation and unlike what I want to do in this chapter. I want to stage a kind of experiment into advancing knowledge and practice. It’s a creative text where I am both researcher and researched, and where I write in such way that both aspects are present, with greater flux and openness in the telling and its interpretation.”

“And this is what led you to autoethnography.” It’s a statement, not a question, and although this tells me that Nicole sees my line at this point, I can tell she’s still not convinced that it’s the right conclusion. There’s silence for about 20 seconds.

“What?!” I finally ask in what is not quite a shout. She hears my frustration, but looks at me with her ‘you knew this was coming and so should not be upset and besides

we'll work this out and you know it' face. "Sorry," I say, but it does not stop me from asking again, more softly. "What?"

"Well, I'm just not sure it's an ethnography," she answers, sounding like she feels sorry for saying it, but I can tell she's been bottling this up for a while. "I mean, from what you're saying, there is a field site, maybe, but there is no 'other,' no outside group you are speaking about or for or with."

The penny drops, and my face falls a bit; but then I realize this is not really a problem. "Maybe you're right. I mean, I'd argue, first, that I am indeed writing about a group – artists – so we can learn something about them, or about ourselves; I'd say that although it's local to, well, me, I'm looking beyond my own practice as an artist and the purpose of this document is to improve practice and criticism and critique more broadly, how artists engage interactivity and embodiment more generally. That could be considered ethnographic."

"Point taken," Nicole adds gently, but I can tell, in her higher-than-usual voice, that there's more to her discomfort with autoethnography than this. Still, I'm admittedly thrilled that it seems to be just the classification that bothers her, not the style. It's a bit scary, as per my conversation with Linda, but also exciting. I think in convincing Nicole I really am convincing myself; Linda is smart, I say to myself with a smile.

I remember something I else I read about 'narrative visibility of the researcher's self' within groups they were already a part of and writing about; I look up the Leon Anderson article from the *Journal of Contemporary Ethnography* that I think I saw this in (7).

"He's avowedly more analytic than evocative, as autoethnographers tend to be – according to both him and its practitioners – but Leon Anderson says something that I think might help here," I say whilst looking for the hard copy of his article, which I know I have in the pile. I remember that I had written in the margins of the text, rather than taking actual notes; he wasn't my favourite on the topic: precisely too analytic, and Bochner and Ellis agree with me on this point.¹⁸⁶

"Here we go: Anderson calls attention to Patricia and Peter Adler's distinction between 'opportunistic' and 'convert' CMRs, or 'complete member researchers'. The

¹⁸⁶ See "Analyzing Analytic Autoethnography: An Autopsy" (Ellis and Bochner).

former are 'thrown into [their] group by chance circumstance (e.g. illness), or have acquired intimate familiarity through occupational, recreational, or lifestyle participation.' The latter join the group as they research them, become members over time. Although I dislike the exploitative connotation of the word 'opportunistic,' – and perhaps this is your distaste with ethnography more broadly," she smiles a pursed-lip smile and raises her eyebrows with a nod, "I'd obviously be in this category" (Anderson 8; Adler and Adler 67-84).

Nicole starts with a new tack. "I guess my question would be – given your and my discomfort with some of the issues ethnography raises more generally – why even go there? I understand what you are trying to do and think it's a great idea, but wouldn't the rest of what you've offered, along with feminist epistemology, be enough to make your argument and frame? Autoethnography is coming out of that trajectory anyhow, out of the work of the likes of Nancy Hartsock and Donna Haraway, Sandra Harding, Linda Martin-Alcoff and Jane Flax, even that of the performance studies scholars that followed them and are a part of your other research, like Rebecca Schneider and Peggy Phelan. This is about the locus of knowledge production, about hermeneutics and representation. There are many ways to write this that are not necessarily autoethnographic, and any of those possibilities could be justified from various trajectories," she says helpfully.

"You're right," I begin. "When Bochner and Ellis talk about going against the 'disembodied authorial academic voice that argues and tries to persuade,' for example, they pay direct homage to feminism, as well as the more specific 'influx of women, people of color, and Third World sociologists' in their field'" (Autopsy 441-442). "Stacy Jones goes there, too," I add, grabbing, and again glancing over, my notes from her chapter.¹⁸⁷

I look up and out the window, and think for a minute, then look down again, as if searching for an answer in Jones' text. What is it that drew me to autoethnography?

"I guess there are two things I like best about autoethnography," I say, thinking aloud. "The first is that they treat the writing itself as a modality of practice. I understand that there are many fields that insert themselves into the work, but autoethnography is something that, according to Jones, 'shows – performs – a writing practice that tries to respond to the crisis of praxis.' You can see where that fits into the implicit manifesto a bit. The act of writing is the making of an art work, is an incorporating process, even though

¹⁸⁷ See "Autoethnography: Making the personal political" (S. H. Jones).

the text itself will exist as an inscription” (S. H. Jones 783). Implicit manifesto? That’s funny.

I keep going. “Jones says that a ‘perspectival, and limited vantage point can tell, teach, and put people in motion.... personal text can move writers and readers, subjects and objects, tellers and listeners into this space of dialogue, debate and change” (S. H. Jones 763-764). I grab my laptop and search for an old post on my weblog, one with a citation from when I was first reading Brian Massumi.

“Sorry,” I start, “just wanted to find – here it is. That quote reminded me of a passage from *Parables for the Virtual*. Massumi explains that his ‘writing tries not only to accept the risk of sprouting deviant, but to invite it.’ This quote; it’s really good.”

“Take joy in your digressions. Because that is where the unexpected arises. That is the experimental aspect. If you know where you will end up when you begin, nothing has happened in the meantime. You have to be willing to surprise yourself writing things you didn’t think you thought. Letting examples burgeon requires using inattention as a writing tool. You have to let yourself get so caught up in the flow of your writing that it ceases at moments to be recognizable to you as your own.” (Massumi 18)

“He talks about affirmative methods of writing, ‘productivism’ and ‘inventiveness’. I like the idea that this becomes a kind of meta-text in its thinking and re-thinking and thinking about itself again. Autoethnographers discover things, and ask their readers to discover things, in their personal writings” (Massumi 12-13; Ellis and Bochner, *Autopsy*; S. H. Jones). “This chapter would be like my arts production, like the implicit body approach.” I go on, “It’s about understanding the material and conceptual through how they help form one another.”

Nicole looks thoughtful. “I’m not sure you need to be an autoethnographer to discover things through writing in this way. You’re following the likes of Dilthey and Whitehead; Victor Turner linked writing and the performative to philosophy and sociology and anthropology, for example, too. Performance Studies followed his lead on that; there are the feminists, as well. I mean, what you’re saying here is what I alluded to earlier – that this can be more than just reflection or illustration, that it can be a performance itself; it doesn’t need a classification that might have potentially negative connotations to do that.”

I nod, and the words come from my mouth slowly; I'm unable to tell if they come after I think them, or I speak them in order to think. "I guess, with autoethnography, it's the avowed autobiographical aspects that make the most sense to me. I am researcher and researched, remember." I squint my eyes, lick my lips, then, on my laptop, call up something about this. I again paraphrase aloud.

"Anthropologist Deborah Reed-Danahay says that autoethnography... synthesizes both a postmodern ethnography, in which the realist conventions and objective observer position of standard ethnography have been called into question, and a postmodern autobiography, in which the notion of the coherent, individual self has been similarly called into question. The term has a double sense – referring either to the ethnography of one's own group or to autobiographical writing that has ethnographic interest. Thus, either a self (auto) ethnography or an autobiographical (auto) ethnography can be signalled by 'autoethnography'" (Reed-Danahay 2).

"I get it," Nicole picks up as if it were her and not me that last spoke, "but you don't *have* to call ethnography into question. Valid form or not, there's no need for you to have to take that on. It is tangential to your dissertation." She pauses to let this sink in. "What's the second thing you like about autoethnography?"

I shrug. "Style" I start rattling off quotes from my notes, mixing them with my own interpretations on and off the page: "Jones and Denzin and Bochner and Ellis call it an intricate weaving of life and art; writing towards a moment to enact and/or change the world and our ways of seeing and being in and as and with it; they say it challenges, contests, or endorses the official, hegemonic ways of seeing and representing; they want their writings to linger in the world of experience, to feel it, taste it, sense it, live in it; their goals are evocation and empathy, they dwell in the flux of lived experience" (S. H. Jones 765; Denzin, *Deja Vu* 422; Ellis and Bochner, *Autopsy* 431-435).

"Actually," I'm on a roll now, "the way they differentiate between ethnography and autoethnography – and perhaps I just want my own little auto- for reflective practice here, which might be your point – is not dissimilar to the Zeno paradox.¹⁸⁸ When criticizing Anderson's appropriation of autoethnography for more analytic texts, Bochner and Ellis say that they 'want to put culture or society into motion,' while Anderson 'wants to stop it,

¹⁸⁸ See Section 3.2

freeze the frame, change the context.' An autoethnography really is attempting to incorporate rather than inscribe" (Ellis and Bochner, *Autopsy* 433).

Nicole is starting to buy it; I imagine part of this is because it kind of sounds like something she would say, and smile to myself. "Did Linda have any reservations?" she asks. Now we're getting somewhere!

"Well, aside from being jarred by the style," Nicole interrupts me with a laugh that says 'I'll bet,' but I go on without stopping, "she wondered how to judge such a thing."

"And?"

"Well, Bochner and Ellis really just talk about an emphasis on evocation rather than theory development, that this makes it 'good' – which the artist in me loves. But I also found this paper that talks about the dialogues between Aristotle and Plato, about enthymeme and example" (Ellis and Bochner, *Autopsy* 442; Spigelman 72). I scrounge around my notes again. "Ah, here she is, uh, he is, uh," I fumble a bit because the author is female but references another paper by a male academic, and the writing is so interwoven that I can't tell who is speaking sometimes. I tangentially think that I probably make that entanglement mistake myself sometimes, but force myself to get back to the topic at hand. "This paper basically says that we can judge autoethnographic text based on 1) what assumptions we have to make to believe the story, and 2) what we can gain from the story and apply in the future. Basically, it's no different from any analytic text and how we might evaluate it. It's just argued in a contrasting format, in a narrative paradigm so as to encourage," I'm paraphrasing a text as I read it live again, "experiential contradiction, disruptive layering and personal interpretation over asserting absolute truths" (Spigelman 72-75; Raymond).

"And it has to be a good story," Nicole adds.

I didn't expect to shift topics so quickly, but pick up on it as best I can. "Yes – Bochner and Ellis are clear about that: "There has to be a plot, a moral, a point to the story. The difference between stories and traditional analysis is the mode of explanation and its effects on the reader. Traditional analysis is about transferring information, whereas narrative inquiry emphasizes communication. It's the difference between monologue and dialogue, between closing down interpretation and staying open to other meanings, between having the last word and sharing the platform. Stories have always been used as a mode of explanation and inquiry..." (Ellis and Bochner, *Autopsy* 438).

“OK,” Nicole finally says, and I get a simultaneous feeling of excitement and dread. “I’m convinced of the style – why and how and what it hopes to accomplish and also how readers might judge it. But I’m still not convinced it’s an ethnography. Isn’t there anything similar in the art world?”

“There’s that A/R/Tography thing I mentioned.” I pull out my notes on that. “They talk about dealing with the limitations of more traditional modes of research, reference practice-based inquiry, want arts research not to be thought of as qualitative but as its own mode, ‘a loss, a shift, or a rupture where in absence, new courses of action un/fold’” (Springgay, Irwin and Kind 897). There’s a hint of disdain in my voice, and Nicole can hear it, but I keep going. “They say their forms include ‘research as performative, research as provocative, and research as poetic’” (Springgay, Irwin and Kind 898).

Nicole stops me by putting her hand up; it’s a soft gesture, but accomplishes its goal. In her driest voice, with elongated vowels, she asks, “And you completely hate it because...?”

I laugh. “Well, their essays on it read like traditional academic essays, and the their written examples of actual A/R/Tography in action read more like either artist statements or bulleted documents. And, honestly, I find the writings of the group itself kind of bland. Their art works, too. They don’t speak to me in the way autoethnography does. And isn’t that the point? Empathy and evocation?”

I show her the paper I printed out. “Also, look how stupid their spelling of A/R/Tography is. The aesthete in me can’t stand it! What artist would name their movement like that? Seriously?!” We both laugh.

There’s silence for a short while. Nicole is looking thoughtfully out the window again, and I give her a minute to collect her thoughts. Finally, she licks her lips and I know she’s about to be brilliant. I get some butterflies in my stomach. I wonder, not for the first time today, if there is an empirical way to prove to the world that my wife is the best wife ever.

“Nathaniel,” she begins, and then pauses for effect, “There’s a long history of this kind of thinking, and it has quite profound epistemological antecedents. Anthropology itself, for example, with its particular concerns with power relations and writing and so-called inside/outside and self/other relationships, has had an acute critical concern about representation, knowledge and power. And, I have to reiterate again that this sort of

'autobiographical' route" – she tallies her fingers as quotation marks while she says this – "is just one approach in many possible philosophical ways of thinking through the conundrum of a subject who produces knowledge, and the object of that knowledge."

Nicole looks at me warmly. "Even if I'm enamoured of the idea of a kind of fictionalizing element of your dissertation, and in academia more generally, I'm not always buying that it solves the problems of cross-cultural communication, etc. in ethnographic encounters. You might want to look up some of the concerns Marilyn Strathern has in this regard." Nicole pauses for me to write this down.¹⁸⁹

"But," she adds with a smile, "in your instance, you are first the *subject* finding knowledge: jumping through academic hoops and meeting PhD requirements, marshalling all the rhetoric, evidence, argumentation and substantiations, all of those things that will mark you off as a 'doctoral' persona, an 'expert,' or whatever." She lists these in a casual but loving counting-off of the requirements I've been slaving over for the last two years and more. "And secondly, you are also the *object* of study; the mute artist who generally only gets to speak through the artist statement or the interview, and whose words, however theoretical, conceptual or intellectually rigorous, will be taken only to support the artefact or the scholarly interpretation of that artefact."

I'm feverishly writing all this down, hoping to get it right in my own text. "And here," Nicole continues, "you're trying to own both spaces, have both spaces speaking to each other and contaminating one another, disrupting one another through their varied voices and perspectives and practices." She again pauses. "At its close, the academic discourse is left a little unsettled, and the art-making practice is left a little unsettled, both explicitly and implicitly." She smiles and I nod, pen still scribbling. "Perhaps you shouldn't think of this as an autoethnography," she concludes theatrically, "but an intervention."

*

In the end, I decide that it isn't important what I call it, really (as long as it's not something horrible like "A/R/Tography"). This is not a debate about what is or is not autoethnography, or about the limits, benefits and shortcomings in ethnography at large, for that matter. It's 'a somewhat autoethnographic experiment,' whose real aims are to understand embodiment and interactive art, together, to further praxis and critiquing

¹⁸⁹ I later find a relevant reference, with pertinent points on a very similar subject. See "The Limits of Auto-Anthropology" (Strathern).

methods in contemporary arts production and discourse. It is a kind of meta-text, an in- and un-folding of the embodied ideas this dissertation, and the art works it studies, attempts to put forth.

We're all in the kitchen now, a few days later; Sidonie is having her supper and Nicole is working on one for the adults. It smells good – one of Nicole's fancy variations on a veggie bake, with Irish potatoes, fresh sage and gruyere cheese – and I feel a bit guilty about the fact that I've not done much of the housework at all since deciding I wanted get a draft in before we head to South Africa, to pack up the things we left there and ship them over to the States. I walk over to the sink and start doing the dishes. We're talking about the various possibilities for a narrative arc in the new section; it's a much more casual discussion than the last one.

"I really don't think there's a need to go too far back into your personal history. It'll feel contrived, unnecessary for your larger point," Nicole is saying, "Perhaps a tension between your academic and art-making selves?"

I shake my head. "But there isn't a tension really there. That's the whole point."

"Well then make that point within the text itself," Nicole says, shaking the spoon in her hand. The food's aroma is calling to me. "A story about the mostly constructed tension between writing and making, one that is only there because people say it is. Talk about the fact that it's unfortunate they have to be separated for the dissertation, despite that they're inherently entwined."

"That's good," I'm nodding. "I like that for the intro, for when I'm speaking with you or Linda or whomever the dialogue-slash-debate is with in order to explain why I've chosen to write it in this way. But," I start thinking aloud, "when there's no literal dialogue, when I'm diving into speaking out the making of the work in my own history, when it's not me and someone else exploring those tensions as a kind of back and forth parley between two whole and real people," I stop to make sure she understands what I mean, then realize I lost myself in the long sentence and start over. "I really don't want to separate those aspects of my practice, the thinker and the producer, when I get into the art-making part of the narrative. Writing and making, the academic and the arty dude: these are not two distinct voices in my head."

“Yeh,” Nicole says, offering Sidonie – Sid, as we usually call her – some broccoli. Our amazing two-year-old actually *likes* broccoli. I put the last of the dishes into the rack and dry my hands.

“What about,” I say in my ‘I’ve got a great idea’ voice, “what about if it’s the ‘me’ of now and the ‘me’ of then? The writer and maker who was thinking and questioning and not recognizing what was unfolding as I tried to produce art, and the writer and maker of the dissertation who is discovering and connecting in the re-writing of the chapter; a dialogue between then and now. A story about the story and how it led to where I am at present, but one that reveals that this was never an inevitable end? I’m only now even finding out where I am, and where it might go next. Know what I mean?”

Nicole is nodding. I run to my computer in the next room, and call up a Denzin paper I was reading earlier. I quote, screaming across the flat.

“In bringing the past into the autobiographical present, I insert myself into the past and create the conditions for rewriting and hence re-experiencing it. History becomes a montage, moments quoted out of context, ‘juxtaposed fragments from widely dispersed places and times’.

I move across and between several writing styles, genres, and representational performative forms... I seek a dramatic, performative poetic, a form of performance writing that includes excerpts from personal histories... scholarly articles, and popular culture texts.”

(Denzin, *Deja Vu* 423; Ulmer 112)

Nicole comes from the next room, with Sid in hand. “What?” she asks, shaking her head and laughing. “I’m sorry; it’s very hard to hear from the next room, you know, with Sid and cooking and the telly on.” I hadn’t even noticed that Sidonie left the television on, *Monsters, Inc* running across the screen.

“I’ve got it,” I say. “It’s kind of a story about the stories that embodied art-making enables. About how they form and re-form in their performative telling and re-telling.”

Nicole looks at me and nods. “Uh-huh.” It’s a look and tone that moreover says, “Well, duh.”

7.3 Approaching the Implicit

I recently redesigned my web site.¹⁹⁰ Instead of breaking the works up individually by date or medium – which is how many sites are organized, but I feel can limit how people understand the work – I set up a kind of cross-referenced tagging system, like a blog. So rather than having to choose if a video installation that uses sculptural elements belongs in the “video” or “installation” or “sculpture” section of my site (or having multiple copies of the page), it can sit across all three. I can also tag it conceptually as interrogating notions of embodiment and interventionist in nature, and include it as part of an ongoing series if I want. Any work can have as many tags as I want, and the database behind the site understands where media and concepts and series are connected: you click on any tag and the site reloads after filtering out those works not related. It also uses an algorithm to dynamically show several ‘similar works’ when viewing any singular piece.

The most fascinating part for me in all this is that I myself get to see the trajectories of my thinking and making, over time, through the eyes of a simple computer program. I am certainly not always aware of how I am continually jumping back and forth between my ideas and media, how many different ways the seemingly disparate – and also similar – works relate to each other, or don’t.¹⁹¹

Concordantly, I also began re-thinking what led me to my current practice and modes of inquiry, how my past and ongoing experimentation and research continue to influence each other in ways I often don’t know about or see until in hindsight. My practice has always been guided by questions: each new work and how my audience or participants engage with it opens up new and other possibilities in the studio, as well my academic research. The recent re-design and re-thinking, I should add, happened alongside my writing of the first three chapters of this dissertation, which also coincided with a re-working of my overarching artist statement.¹⁹²

Forced to think broadly and in text, I’d say my art – just as the implicit body framework – seeks to interrogate the relationships between the body and other emergent categories, including but not limited to language or self or vision or time. I try to accent and challenge that which is often presupposed in contemporary culture, in order to foster

¹⁹⁰ <http://nathanielstern.com>

¹⁹¹ These last two paragraphs were collected and edited/paraphrased from a blog comment I once left at <http://edwardwinkleman.blogspot.com/2008/06/tuesdays-aside-shifting-gears-trust.html>

¹⁹² See <http://nathanielstern.com/artistic-inquiry-artist-statement/>

greater dialogue around these complex systems and their relationships to affect and meaning-making.

But that's not where I began in my practice, and nor where I thought I'd wind up. Given her intimate familiarity with my work, Nicole was once asked to write a feature on me for *NY Arts* magazine in 2006. She begins,

Stern claims his interest in the body comes from his early study, and subsequent hatred, of fashion design. That, combined with his musical and slam poetry background, lead Stern towards considering the body as text and as concept, but eventually (and he would say, inevitably) steered him to the inverse: the body as performed and emergent. One of the most fascinating aspects of this work is that it does not presuppose the categories of body and language that it works with. (Ridgway, BTF)

I can see now that my early ventures into art intended for a large public audience might actually explain my current fascination with autoethnography: it began with a fictionalized narrative inquiry, with a text (of sorts) in and around the body.

The ongoing body of work I affectionately called *the non-aggressive narrative* first manifested in a net.art site called *hektor.net* (2000, see Figure 30, page 192).¹⁹³ The piece came out of my core interests at the time: design, poetry and, most of all, narrativity. In film theory, narrativity speaks to the processes whereby a story is presented and then read by the audience. I used the term in my work in order to counter the brouhaha around hypertext at the time, opting to engage with more exploratory ideas around web surfing and oral traditions for story construction. Taking cues from Mieke Bal's 1997 book, *Narratology*, I loosely defined narrativity to be 'the conditions under which a story may or may not emerge.'

On a more personal note, I can also admit more openly now – I was unaware of it then – that I wanted to explore some of the trauma I had experienced due to a car accident at the age of 17; I was the driver, and there were people hurt because of my carelessness. I wanted play out said exploration in a way that invited empathy without

¹⁹³ Although it now uses flat QuickTime files rather than streaming technologies (explained later in this section), *hektor.net* is still live / online, as well as available for free and full download under a Creative Commons License, at <http://hektor.net>.

voyeurism, in a way that put the viewer, rather than myself, into the active role. I hoped to unfold the potential for a story, rather than speak the details of 'what happened' (to me).

Part of this was academic interest, some of it was because I thought a 'real' autobiography was too self-indulgent; but mostly, I think I must have liked performing new possibilities in 'what happened' in order to create new possibilities in what 'just might happen' beyond the present. From my web site:

hektor.net is a navigable artsite of experimental pinhole photography, spoken word and video poetry. Each [video] vignette [there are 13 in total] is in a performative writing style, and the series collectively explores narrative and storytelling, time and memory, multiplicity and identity, anger and trauma, and the labors of communication.... While viewers surf the site, hektor attempts to re-member: embody a past in the present. Floating memories, re-presented as art pieces, congeal in different patterns; from the 'ruins of memory,' viewers re-invent the past and its meaning, piecing together a story for themselves. However, similar to Julio Cortazar's *Hopscotch*, where readers can tackle any chapter, in any order, to assemble a whole story, this narrative is built by the listener, according to which pieces they have seen, in what context, and in which order. Viewers continually bring new insights to possibility by juxtaposing visited and revisited pieces and ideas several times over. (Stern, hektor.net)

The final site emerged without any specific histories, as a nonlinear series of ironic, lucid and funny monologues that hektor would say are about personal relationships, but are more transparently about his self-infatuation, his encounters with sexuality, class and race, and his uncomfortable revelations about his participation in the power structures that makes those identities very real. Viewers click through and construct a mostly unrevealed narrative which is driven by their responses to a made-up character that is not me or even part of me, but whose initial creation was inspired by a past that I myself am always only beginning to grasp. hektor is an intelligent jerk with a fair amount of self-reflection, and my intention – like in autoethnography – was for provocation and empathy.



Figure 30, *hektor.net* by Nathaniel Stern, 2000
net.art including video, animation, pinhole photography, slam poetry and text

In the production of *hektor.net*, I utilized drastic digital effects on several of the monologue-style video clips – many displayed from several angles at once – which were then seamlessly embedded inside of larger images (see above); each vignette opened in its own browser window and played with layers upon layers of foreground against background, using pop-ups, animations and graphics that fed off one another across the screen. This aesthetic was an attempt to exploit movement and stasis in several open windows at once as a substitute for embodied, live performances on the poetry slam stage – where *hektor*, as a character, was initially born.

To keep the integrity of the site I envisioned, I made a conscious choice to adopt broadband video streaming technologies that, unfortunately, the vast majority of homes could not employ at the time. In line with this decision, I aimed for audiences in academic institutions and web/design firms, who would have access to fast Internet connections and the necessary plug-ins like Flash and QuickTime, which were not as ubiquitous as they are today (YouTube and other Flash-based video applications were barely even fantasies).

One of the unanticipated outcomes here were people's responses to the site in the communal spaces necessarily used to watch them: cubicles, computer labs or Internet cafes. *hektor's* monologues, which can still be viewed online at *hektor.net*, tend to contain racy spoken word about topics such as desire or racism; the images range from scary to somewhat sexually explicit, and the overall vibe is suggestive of deviance. Says Eduardo Navas in a short review, "Some pieces take on social issues such as lower, middle, and upper class values while other pieces show Hektor's obsession with sex" (Navas, Backlog).

While my initial intent as an artist was to give *hektor*, the site, and his and its visitors a complexity that was greater than the sum of all parts, the unexpected outcome was several dozen angry emails from embarrassed office workers (etc), who were caught

viewing and listening to what could be misconstrued as pornographic, sexist or racist material.

I actually felt pretty awful, felt responsible for this made-up character whose words I *said* were not my own, despite the fact that they came out of my mouth, and from links I had forwarded around the small sphere of net.artists at the time. But the whole situation was so fascinating that it drove me to the next phase of my artistic inquiry. I had tangentially hoped that the headphones and screens and the stories hektor performed might have an affective impact on viewers – heart racing on a given click, sweating palms in response to an image, anger rising reactively to spoken and provocative phrasings – but because of the spaces viewers used to engage with him, the people my audiences perceived to be watching them, hektor sometimes elicited embodied inter-actions that were far more pronounced and physical. His victims would jump up from their seats to cover their screens from potential passersby; their hands would shoot out in order to quickly shut off computer speakers; they'd stumble and stutter and look around nervously whilst simultaneously rushing the mouse to the corner of their screen's browser windows in order to close all of them. This wasn't always the case, of course, but what little news reached me succeeded in opening some exciting possibilities that lay outside of textual narrative. hektor was indeed enjoying the complexities I had intended for him, not necessarily as a character and story that online communities were stitching together, but through the real world responses of his viewers – for better or for worse, and in relation to the colleagues/community around each individual's computer stations. This, I believe, led to my direct interest in physical relationships to the site and situation at hand.

7.4 Body-Language

Near the launch-time of *hektor.net*, I was simultaneously learning how to develop physical computing projects and use computer vision software, so my next questions flowed relatively easily from the last. I wondered about provoking action, rather than reaction. I began to ask, "How might I actually instigate exploratory or probing or scrutinizing gestures?" I was still trying to couple this inquiry with my interest in storytelling and poetry, and so became enchanted with JL Austen's notion of performative utterances, or 'speech acts.'

Proffered in his posthumously published lectures from 1955 at Harvard (Austen), the basic premise is that performative utterances are spoken or written words that actually 'do something,' rather than simply describing an event. They perform some kind of action.

The most classic example of such an event is a wedding: with the spoken words, “I do,” the speaker is transformed from a single person into a spouse. Words literally change his or her ontological state of being.¹⁹⁴ Other easily understood performative possibilities include a declaration of war, to command or forbid, or to ‘ask’ something of someone, as an act itself.

My more recent research fortuitously reveals that performativity as a concept has been appropriated (and thus redefined) by various disciplines over the last several decades, leading performance studies scholar Richard Schechner¹⁹⁵ to declare it “A Hard Term to Pin Down” (PS 110), and to dedicate an entire chapter in his book, *Performance Studies: An Introduction*, to its definition, history and use.¹⁹⁶ He says that as a noun, a performative – which is no longer necessarily spoken – “does something”; as an adjective – such as what Peggy Phelan calls performative writing – the modifier “inflects... performance” in some way that may change or modify the thing itself; and as a broad term, performativity covers

a whole panoply of possibilities opened up by a world in which differences between media and live events, originals and digital or biological clones, performing onstage and in ordinary life are collapsing. Increasingly, social, political, economic, personal, and artistic realities take on the qualities of performance. (Schechner, PS 110)

One can see where this connection I unintentionally found between text and performance eventually led to my understanding of embodiment as performed, and thus my pursuit of creating interventions in that performance. Immediately following *hektor.net*, my two most significant interests along the trajectory I’m following for the narrative of this chapter were: to entwine text and activity in a recognizable way; and to catalyze gesture as enaction. Unbeknownst to me, this was the beginning of the as-yet-unnamed Body-Language implicit body thematic.

My first foray into interactive installation, *enter:hektor* (2000/updated 2005, see Figure 31, page 196) asked visitors to literally chase or bend or stretch after hektor’s

¹⁹⁴ In his lectures, Austen breaks these down further, into several categorical types, depending on their implementation and on what they accomplish.

¹⁹⁵ See Chapter 3 for more on Schechner.

¹⁹⁶ Even here, Schechner barely scratches the surface of the ways performativity is understood in Europe and the Americas, and does not at all address its very different use in, for example, Germany and Japan.

words. Dan O'Sullivan, co-author – with Tom Igoe – of *Physical Computing: Sensing and Controlling the Physical World with Computers*, and a very influential professor and critic with regards to my early art explorations, pushed me to try and elicit from my participants the same “jerky expressions and exaggerated gestures” that hektor exhibits in his online videos.¹⁹⁷ By this time, hektor was completely separate from any hint of my own personal history; he was used merely as a reference point to create malleable art works that I used to try and write relationships – physical or otherwise – into and out of existence.

From my web site:

enter:hektor is an immersive, interactive installation that combines conceptual and aesthetic principles from traditional installation, interactive art, and performance poetry, to explore the relationships between text and the body. Its participants enter through black and red velvet curtains – a literalized performance space – and into a white interaction area approximately 8 meters long; the width at the entrance begins the size of a doorway and expands to that of a large projection screen.

Upon entering, viewer-participants meet with a... real-time abstraction of themselves – an outline drawn with large black dots; the closer they are to the screen/camera, the larger their image becomes. hektor's thoughts (in the form of text) float around them, in animated sequence. With this exterior re-presentation of their bodies, viewers-turned-performers can grab and trigger hektor's text; each word that a viewer's outline touches will stop, turn red, and recite a line of poetry. *enter:hektor* asks viewers to “leave behind” their everyday performances of self, and attempts to accent each step and movement as a rich, performative gesture....

As viewer-participants learn how to perform this space, they move in new ways. Whether they are trying to ‘speak,’ or doing their best to avoid it, hektor forces them to go between the same exaggerated gestures and jerky expressions that he does. I've watched some viewers crawl into a ball and lash out at his words with their arms, others dance

¹⁹⁷ Dan recommended this in both one-on-one conversations, and class critiques, in the Spring of 2000 at New York University.



Figure 31, enter:hektor by Nathaniel Stern, 2000 (updated 2005)
Interactive Installation and Software, dimensions variable

and play on the fringes in an attempt to speak quickly and all at once, while still others get up close to the screen and squirm around words, so as not to speak.¹⁹⁸

enter:hektor is a recognition of the negotiations and contradictions inherent to the performance of communication, and of self. We are asked to use our bodies as a writing and speaking tool [and] to create a poetic language of gesture. (Stern, *enter:hektor*)

As evidenced by my artist statement, above, I became enthralled by how people interact with words, with screens, with communication, with space, with themselves in and as bodies – all at once. Although at the time my focus was probably more on identity than differentiation, on self and subjectivity rather than body and corporeality,¹⁹⁹ here is when I began my attempts to collapse saying and doing, affection and reflection. Perhaps I started to see that none could exist without the other; I was at least headed in that direction.

But I was also still playing out my interest in narrativity. For example, I began working on another video series similar to the monologues found on *hektor.net*. In *the odys series* (2001-2004),²⁰⁰ *odys* explores the same memories that *hektor* does, but engages his trauma through other means. While *hektor* is lucid and aggressive, but purposefully manoeuvres around explicitly speaking the past, *odys* keeps trying to approach it, but fails; lacking *hektor*'s articulation, he stutters over words and explanations so that viewers are again left to fill in the spaces between.

My next interactive experiment paralleled *enter:hektor*, but with *odys*. At that point, I was simply continuing the experimental and performative format of my 'narrative.' *odys* enabled me to delve deeper into the physical spaces between words and between characters. I didn't know it when I first began producing the piece, but I wanted to ask viewers to explore his stuttering, with their bodies (see Figure 32, page 198).²⁰¹

¹⁹⁸ See documentation video online at <http://nathanielstern.com/2000/enter-hektor/2/>

¹⁹⁹ See Chapters 3 and 6.

²⁰⁰ See <http://nathanielstern.com/2004/the-odys-series>

Both *hektor* and *odys*' names are plays on stories within Homer's epic Greek tales. For more on what I now affectionally call the *non-aggressive narrative*, see <http://nathanielstern.com/2005/the-storytellers/>

²⁰¹ See video of [odys]elicit online at <http://nathanielstern.com/2001/odys-elicited-entraced/2/>

[odys]elicit is a large scale, interactive installation where every movement of the viewer, small or sweeping, births stuttering text onscreen. The viewer's motion elicits, character by character, passages from odys' text. The piece responds to small movements, writing the text onscreen slowly for the viewer to read, or to rapid passersby, whose full bodies birth hundreds of flying characters, impossible to decode.

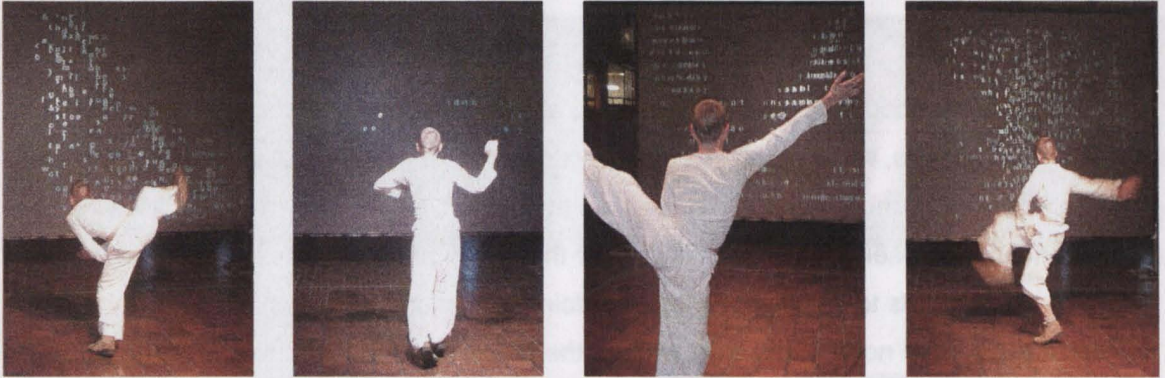


Figure 32, *[odys]elicit* by Nathaniel Stern, 2001, in use by South African choreographer Jeannette Ginslov
interactive installation, software, and performance piece, dimensions variable

In odys' work, viewers are forced to look at the spaces between language and meaning, the luxuries of stuttering and silence as communication, and the effects of accelerated and decelerated time.

[odys]elicit physically places viewers at the center of co-invented noise, forced to perform – willingly or not. odys' text has been reduced down to where it no longer has meaning and is re-birthed, with possibly infinite meanings, or none at all. (Stern, Elicit)

I bring up *elicit* (2001), which also exists as a collaborative dance piece with South African choreographer Jeannette Ginslov, mostly because of what I can retroactively see as its *failure* to intervene in movement. Playful and beautiful, and with wonderful allusions to significations and signifying practices, structuralism and gesture, the piece itself stutters, but does not elicit stutters; it may open up “meaning and bodies” as explicitly understood concepts, but not “embodiment and meaning-making” as emergent categories. As I watched participants interact with my piece – obviously inspired by the

work of Camille Utterback²⁰² – it slowly dawned on me that I needed to press further into the possibilities of choreographing careful, physical movements between text and flesh.

This is where the beginnings of a critical framework were probably forming. I never voiced the precise critique above, but I found myself engaging more and more with how participants move and relate, and embody meaning. At the time, this began with my researching contemporary writings on embodied communication, and it led to my re-thinking and re-working the inter-active stutters of the previous work.

The artist statement for my next piece, *stuttering* (see Figure 33, page 199), via my web site and circa 2003, describes some of the thinking behind, and performers' resultant bodily interactions with, the work:

According George Lakoff, author of *Philosophy In The Flesh* (Lakoff and Johnson), human communication is always already mediated. Our emotions, our past and the memories it carries, cannot be separated from it. He says, "The mind is inherently embodied." Because of our flesh, our multi-sensory perception, and our personal experiences, our communications convey much more than transparent information.

stuttering, an interactive installation, proposes a space which accents how we effect, and are affected by, conversation and comprehension. It suggests that stillness and stumbling play a role in the un/realized potentials of memory and storytelling.

Computer printouts are scattered about the floor, containing quotes and passages about stutterers, situations in which stuttering, in its broadest sense, is common, and suggestions of when and where we should "make stutters," in order to break "seamless" communication. Each viewer in the space triggers a large-scale interactive art object projected on the wall in front them. This projection is broken into a Mondrian-like mirror, where each sub-section, initialized by body-tracking software, animates one of the floor-found quotes; every animation is accompanied by an audio recitation of its text.

²⁰² Two years before, Camille had been working on *Text Rain* (see Chapter 5) on the floor of my building at NYU. I saw it forming, in process.

stuttering thus creates a tense environment through its inescapable barrage of stuttering sound and visual stuttering: noise. Only by lessening their participation will the information explosion slow into an understandable text for the viewer. The piece asks them not to interact, but merely to listen. Their minimal movements, and the phrases they trigger, literally create new meaning.

The spaces between speaking and listening, between language and the body, add to the complex experience of communication. *stuttering* is not displaying data, but rather, pushing us to explore these practices of speaking and listening. It suggests that communication comes to and from us, in ways that even we do not fully comprehend. (Stern, *stuttering*)

Unlike *enter:hektor*, in which movement and text are frenetically paired, *stuttering* is contrary in its interaction. In *enter:hektor*, you must physically pursue hektor's words to communicate at all. In *stuttering*, if you move rapidly in front of the screen, it executes a storm of visual and aural stutters in response; you're unable to make sense of the barrage of noise you trigger. If you want to listen properly, you must do so with your body. Careful, even cautious, viewers learn to physically stutter with their fingers or legs or heads in order to elicit just the right proportion of words.²⁰³

Nicole, in the aforementioned *NY Arts* biography, later said:

Stern's interactive pieces work to implicate participants in his narratives, weaving them into events shot through with thoughtful intention and distracted passivity.... The tangle of text, voice and motion, makes our first encounter with *stuttering* feel almost perilous. We are dragged into the frenzied tension between body and text that the stutterer endures, but are then invited to slow down and stop doing. Seducing us into delicate gestures, and almost Butoh-like awareness, the piece allows us to perform quietude, but not acquiescence. (Ridgway, BTF)

And more broadly:

²⁰³ See video documentation of *stuttering* in use online at <http://nathanielstern.com/2003/stuttering/2/>

Staged via various media, Nathaniel Stern's work enacts the interstices of body, language and technology. It seeks to force us to look again at the relationships between the three, and invites us to experiment with their relation. His body of work can, perhaps, be described as an exploration of the interstitial itself – revisiting between technology and text the dangerous spaces of enmeshment, incipience, and process.

(Ridgway, BTF)

With regards to intervening in embodiment and meaning-making, the Body-Language sensible concept and thematic, I can now see that *stuttering* is my most successful art work, in that it induces the most complex and careful explorations – in body – of how sign and body relate. In this piece, the involved narrative edifices behind odys and hektor can easily be shed, and the affective strength of any active participants' experience of the piece is no less powerful; it is in fact more so. Over the past few years, I have spent days at a time at the Johannesburg Art Gallery, and *stuttering's* various other installations, watching everyday gallery-goers, dancers, children and academics all play out stutters and quivers between signs, exploring their relationships to, and as, flesh and text and image.

7.5 Social-Anatomies

"It's not that it feels dishonest, really," I'm saying to Nicole. "It's just that...." I struggle to find the words, "the way I'm telling it...." I sigh.

"It feels so... so... so inevitable."

Nicole looks up at up me from what she's doing, with her eyes but not her head. She's blowing on a spoonful of homemade mashed potatoes with garlic and goats milk Brie, to cool it down for Sid. I'm again tangentially very proud of what a classy eater our two-year-old is. Nicole pops the food in Sid's mouth – who is lazily drawing circles with a pencil on the kitchen table – and waits for me to continue.

"I mean, it's all true," I go on, figuring out what I'm going to say only as I say it. "But there are so many other factors I don't mention, so many other people and relationships and bodies of work and jobs and parties and – *whatever* – that affected where I am now. And even this very idea – 'where I am now.'" I hold up two fingers on each hand and flex and extend them quickly in order to show quotation marks. "What on Earth does that *mean*? I don't really *know* where I am. Ever."

“Three years from now, I may see all of this as a blip, a fumble, after I decide to go back to narrativity or slam poetry or other concepts or media that interest me but that I’m not concentrating on at present for whatever reason. Maybe I’ll go back to playing music! Even this PhD, the whole thesis, could very easily be written off as a completely different stage in my progress at some point in the future. If it suited me, in my re-telling I could skip out on my interactive work and highlight projects like my Wireframe Series or South African performance events – current projects not even discussed in the dissertation.²⁰⁴ Although they also deal with the body on some level, I might say that, I don’t know, they mostly served to lead me towards relational aesthetics. The ‘Nathaniel Narrative’ would then read,” I take on my ironic professorial tone now, “In my research on relationality, I was of course steered towards texts by European curator and cultural theorist Nicolas Bourriaud. Seeing the work of the likes of Liam Gillick, Rirkrit Tiravanija and Santiago Sierra, I began to recognize the potential in more subtle and subversively political art. I eventually abandoned physical interactivity to instead concentrate on social participation – an inevitable end, in retrospect...”²⁰⁵ I realize I’m starting to sound slightly belligerent at this point, but care little.

Nicole laughs at me lovingly, which makes my fear and aggression dissipate immediately, but she doesn’t interrupt my monologue because she knows I’m not done. She’s aware that I’m just airing out my frustrations – not an uncommon thing among PhD students, believe it or not. We both know that this is how writing and making happen, but that fact doesn’t mean I can’t complain about it. I sigh again, knowing I’m being kind of ridiculous, but then I carry on as if I hadn’t even stopped.

“And what about all the other things I’m not mentioning from the last eight years or so? The slam poetry nationals helped me find odys. My residency at Cornell, in Ithaca, affected his story, and his and my engagement with it. Our marriage and the move to Africa, teaching HIV-positive township teens, my collaborations with dancers: these things challenged my understandings of self, of body, of relationships, and of reification. And *more*,” I say emphatically. “My collaborations with lo-tech new media artists like Marcus Neustetter, the downtown Johannesburg studio with Christian Nerf and experimental

²⁰⁴ See <http://nathanielstern.com/art/descending/> for a reverse chronological listing of my art projects since 2000. These works are from 2007 and 2008, during which time I was researching for and writing this dissertation, and yet warrant no other mention because they would be tangential to its thesis.

²⁰⁵ See Section 3.6.

residency at the Joburg Museum²⁰⁶ – all of this, and so much I'm sure isn't coming to my mind right now, feeds into how I engage with my work and process, with theory and with life. I never know what will be most influential until years after it has happened, and I may never fully understand all the consequences, good and bad, of these activities and experiences."

I stop speaking for a moment, and Sid looks up from her drawing.

"Daaaaaddy! Da-da-da-daddy!" I can't help but smile big. Aware that she has her ranting father's full attention now, she aims straight for her golden ticket. "Watches... monstahs? Monstah time? Baths time, yeh? Mon-ster time. Yeah. Ooooooh-Kay." My heart melts as she gets up and starts walking to the next room, then stops, turns around, and asks again, "Daddy? Come."

Nicole and I both smile. "I'm coming sweetie," I say to Sidonie, realizing that in all my blustering, I left out the most important person and relationship in my entire life. I think about how Nicole always jokes that it's no accident I started producing 'pretty pictures' right around the time she got pregnant.²⁰⁷

I pop in Sid's *Monsters, Inc* DVD; move her little plastic tub in front of the telly (we don't have an actual bath in this apartment); fill it with water and bubbles; soap her up; and plop her in. We sit and play and splash for a while in front of the television, talk about her favourite characters – 'Boo' and 'Sully' – and worry over the 'bad monsters' versus those who are 'just pretending.' She loves the bath, so instead of taking her out, I keep adding more warm water on top, and Sid is starting to look a bit like a prune.

Nicole is sitting on the couch, reading a novel. When Sid is completely engaged by the 'Boo in the Bathroom' – I have no idea if that is what it is actually called – scene, I sit down across from Nicole for a break, and she puts down her book and picks up where we had left off 30 minutes before.

"It's really part of the point you know," she starts. I look up.

²⁰⁶ Most often call the Johannesburg Art Gallery, or JAG

²⁰⁷ See my *Compressionism* (2005 and ongoing) series of prints in Chapter 8, and online at <http://nathanielstern.com/art/compressionism/>

“The process you’re talking about is an example of continuity at its best.²⁰⁸ Of narrativity, too. Of writing, of making, of performance and emergence.”²⁰⁹ She waits for me to nod – I almost say, ‘Very poetic’ in dry response, but think better of it. “But after that, once the writing is put to paper, in the dissertation itself? It’s nothing more than an exercise in good editing, in trying to ameliorate that sense of teleology.”

I shift in my seat, and Nicole takes in a short breath in preparation to speak again. “Whether you are making art, or writing fiction, non-fiction or an autoethnography, you can never include everything from the back story. Or everything that happens as part of its continuous present, for that matter.”

I nod another defeated nod, as if to say gloomily, ‘Yeeeee, I know.’ Of course Nicole is right; and I knew it even before she said it. She doesn’t stop, though.

“The art-making can be a discovery for you – it was a discovery for you; the writing can re-situate it for you – as it seems to be doing; but the final text you are working towards must end up as just the right mix to invite similar discoveries and re-situations for your readers. What you choose to include, and not include – how you edit – only *that* will foster such a thing. It’s the difference between a long text, and a good one.”

I take Sid out of the bath and begin to dry her off.

*

I’m not entirely sure why things progressed the way they did after *stuttering*. Or more specifically, why my work and I progressed the way we did.

Perhaps it was because I felt I needed to branch out a bit while producing my first large-scale exhibition of works from hektor et al’s narrative.²¹⁰ Maybe I thought I had exhausted the concept for myself, or I had finished my personal explorations of trauma. Maybe I’ll go back to it later. In all likelihood, I left the narrative behind simply because hektor and odys, as tools and as constraints, had served their purpose in furthering my work, but I now felt more than capable and ready to move on from them. I could explore

²⁰⁸ See Sections 3.1 and 3.2

²⁰⁹ See Chapter 3 more broadly.

²¹⁰ *The Storytellers: works from the non-aggressive narrative* was a solo exhibition at the Johannesburg Art Gallery, from December 2004 to February 2005. See <http://nathanielstern.com/2005/the-storytellers/>

and inquire into various areas of discourse without such an intricate back-story for support.

Following *enter:hektor* and *stuttering*, I began concentrating more on interaction and performance / embodiment. One result of this move – or perhaps *this* was the action *behind* the move – was a step or three away from text and from language. At the time, the most specific catalyst that helped propel me towards performance and away from text came out of my watching how people engaged with *stuttering*. As with *[odys]elicit*, I can see in retrospect how this watching, my interest in finding meaning through inter-activities and physical relationships, also helped me move towards what would later become the more concrete critical framework put forward in this dissertation.

As described in the last section, when viewers were alone with *stuttering*, they would investigate with their bodies, physically stutter and play out awkward gestures and quivers between signs, exploring their relationships to, and as, flesh and text and image. It was actually quite magical not only to experience, but to see happen. Here, embodiment and meaning emerge together, and are accented as difficult and non-transparent. These are not ‘things’ that exist for us to own, but ‘non-things’ that occur to us; bodies and discourse are continuous events.

But this kind of physical and conceptual complexity only materialized when one or two, or maybe three, people were in the gallery. None of the magic revealed itself when would-be performers encountered a crowded installation. On opening night and several congested weekends, for example, I witnessed swarms of bodies in front of the interactive screen, where everyone was just trying to show off, to ‘one up’ or otherwise entertain one another and their audiences. Players would run and dive, make shadow puppet-like outlines for linear narratives, and try to use the *stuttering* software and set up as a backdrop to a party. There were no intimate investigations of bodies and meaning.

Initially, it admittedly upset me. I wanted all my viewers to grasp *stuttering*’s potentiality, to gain from the fact that it offered so many possibilities. Yes, it was fun and funny to watch people move in very close to the camera and overtake the whole screen, triggering a mass of audiovisual stutters. It was amusing to see teams work together to make *Body Movies*-esque²¹¹ shapes and stories unfold. But I couldn’t help feeling like

²¹¹ See Section 4.4.

these partying viewers were missing out on the potential – the potentialized context²¹² – that they were being offered.

Eventually, as with my reflections on *hektor.net*, I came to view these interactions as an opportunity. I began to recognize the sometimes-frolicking scenario as a constructive critique which did not only show *stuttering*'s limitations, but intimated a new interactive situation that could lead to my next work of art. With just the slightest reframing – what was offered to *stuttering* by a crowd – its performance emerged as something entirely different. The same software that had been intended for affective intimacy instead produced a communally interactive space with a party and game-like sensibility. And this space, I saw, manifested rules and structures, despite the fact that they were never spoken or agreed upon verbally.

In the present presence of this dissertation, it's hard to know exactly what I was seeing and thinking at the time. In hindsight, in the language of the research and writing I've done since (in treating my own work as a case study), I know I was watching a socially constituting context – a microcosm of intercorporeality – for the practice of body techniques.²¹³ I began thinking more about how we perform both *with* and *for* others. My next investigation of inter-activity would begin to explore and encourage performativity and affect as and in and with embodied social engagement, through playful competition. It would intervene in the sensible concept of Social-Anatomies.

Given this re-focus, I again turned to the idea of a literalized performance space, like the one I used in *enter:hektor*. But in my next work, I would play out the tensions between performer, performed and audience, and the relationships between all three as precisely that co-original interplay of body and society.

Edited from my web site:²¹⁴

step inside (2004, see Figure 34, page 208) is an immersive, multi-sensory environment, which calls attention to the perceptions of, and

²¹² See Section 3.5 for more on situations as potentialized contexts.

²¹³ See Section 6.2 for more on body techniques and intercorporeality.

²¹⁴ *step inside* investigates a series of concepts surrounding embodiment and intercorporeality that many readers find difficult to grasp quickly; for this reason, the short artist statement that appears on my web site more directly addresses 'the body' and 'identity' rather than 'body techniques' and 'intercorporeality'. Given its full context in this dissertation, the statement included in this chapter has been edited slightly to more closely represent my actual intent, and participants' experiences, with the work.

imperceptible within, embodiment. It provokes us to re-think our bodies as “collage[s] in motion,” and challenges Cartesian notions of duality. *step inside* implies multiplicity and movement as intrinsic to our being; it asks viewers to explore the noise and stillness attendant on the performance of bodies in society.

When ‘stepping inside’ the 3 x 3 x 3 meter interaction space, viewer-participants are immediately confronted with an amplified and echoed trail of noise. This, they’ll soon discover, is the sound of each footstep they take, of all the footwork in the room.

A video camera, opposite them and connected to the *step inside* software, reads their bodies, and separates them out from the background. However, instead of a video mirror, they see only a profile, and are disallowed a frontal reflection. This left-hand ‘projection’ fills their 2-D forms with white noise: video static. The amplitude of the echoed footsteps controls the video’s opacity. The ‘result’ becomes a variable wave of embodied noise.

A written statement, as a provocation to movement, is on the far wall of the space. It invites participants to perform, direct, react to, and interact with, the images and sounds they create. It asks them to try walking, crawling, gesturing, with their bodies; play between silence and tapping, scratching and audio-theatrics on the floor.

While physically working out how they are being re-presented, bodies and noises will sound and feel like a heart, racing to be understood. Through experimentation, viewers’ performances change, as they try and direct their image to suit their fancy – a purposeful performative act. They are both inside, and looking from the outside-in.

External, non-participant viewers will also see the performer’s projected image on *step inside*’s two sided screen, but not their bodies or actions inside the space. They can only guess the intent of the work’s participant, who can likewise only attempt to promote a well-read presentation of his or her body in the communal gallery space and time. There’s a literal wall between what we project with our performance, and how this might be perceived by others.

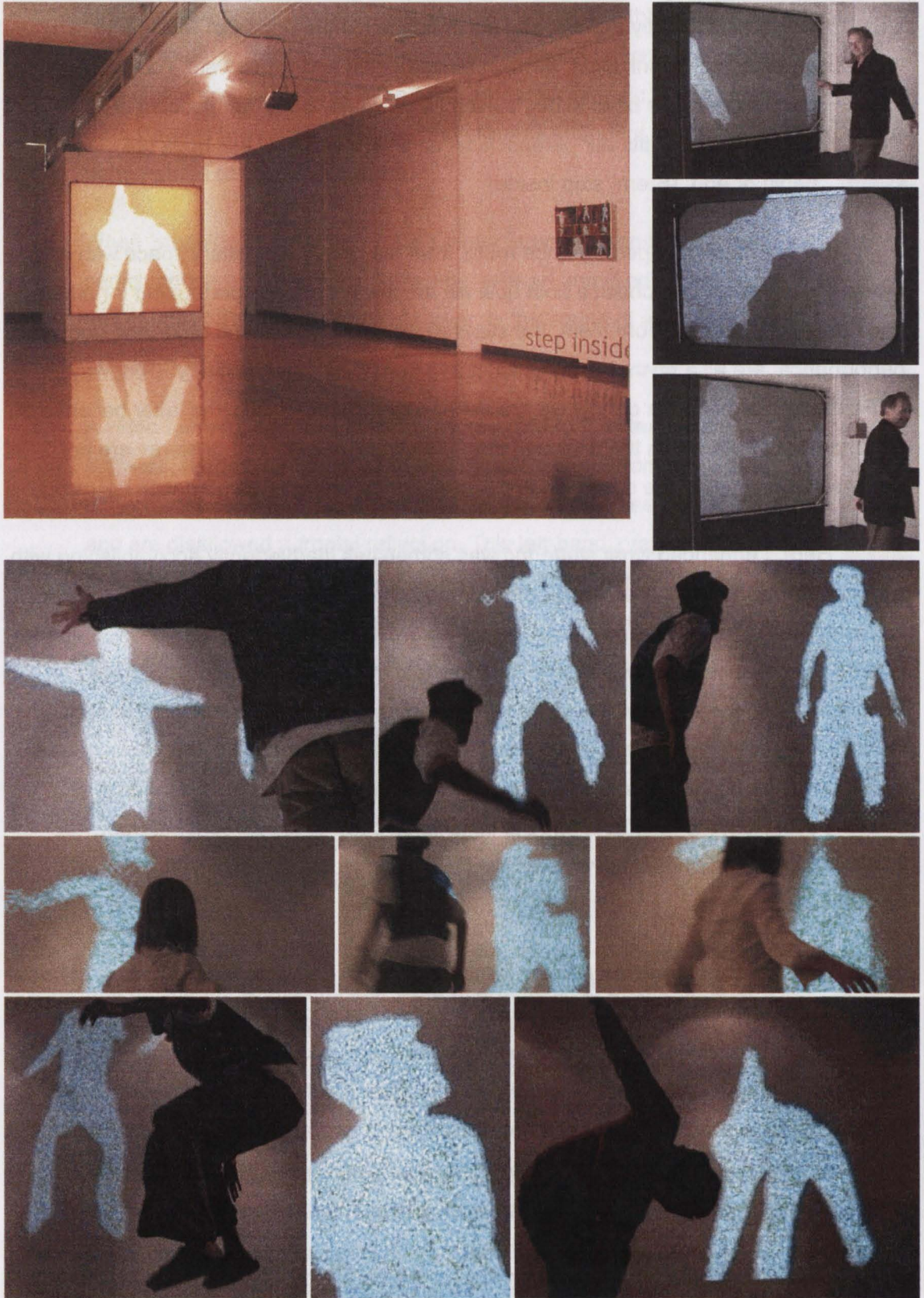
step inside literally frames, and accents, the minute details of willing and unwilling communication, through movement in and with others. Rather than mirroring us back to our 'selves', it provokes 'body' and 'bodies' as question, and shifts our perspectives on where and how this does not begin or end. (Stern, *step inside*)

By cutting off the 'performance room' from the rest of the gallery space with *step inside*, I was trying to emphasize both how we are always already performing for others, and how our separation from them, the separations between self and other and body and performance, are all a myth. Nicole called it a "place of play and intimacy" (Ridgway, BTF): the former because of how we are asked to perform in public, the latter because of our anonymity from within the enclosed stage. Viewers' actions and gestures are not witnessed directly, but are still guided by societal rules, conscious and unconscious.

Here, I enhanced what *stuttering* was sometimes inadvertently accomplishing with a crowd. Performers watched each other's images, the movements and perceptions and vulnerabilities of those around them, how they were 'looked at' when they finally stepped *outside* the box when they were done, and this told them how they should behave. Simultaneously, the awkward interface – the need for stomping or scratching to elicit visibility, the profiled camera that asks for re-adjusted (non-mirrored) body-techniques to create our animated images – meant *step inside* doubly intervened in how we move in social space. Both the interface, and the installation's two-sided screen, interrupt, intercept and distort those movements' (mutually constituted) greater context: intercorporeality.

On a personal level, *step inside*, also freed me to enjoy the ludic pleasure of body-play as entertainment. Unlike *stuttering*, it was always intended to be fun and funny, to embarrass or frustrate or empower its performers. It was a kind of 'serious play.' Participants' efforts ranged from tap dancing and somersaults and cheerleading to dropping change on or sweeping the floor whilst trying to make shapes with their bodies that performed textual characters or sexual acts or flipped bodily identities (How does a child perform an adult body? A man become a woman? Vice versa?).

Inside my little cube, the performance of the body lacks the everyday signifying cues we are used to, and enables us to discover new – as Lozano-Hemmer would say, 'alien' – and different per-formances in and of and as society.



*Figure 34, step inside documentation photos (2004), by Nathaniel Stern
Interactive Installation, Software and Performance
inside dimensions: 3 x 3 x 3 meters, outside dimensions: variable*

Affect, says Massumi, is irreducibly bodily and autonomic; he says that it is not pre-social, pre-reflexive or unconscious, but rather “asocial... it includes social elements but mixes them with elements belonging to other levels of functioning and combines them according to a different logic [because] the trace of past actions, including a trace of their contexts, are conserved in the brain and the flesh, but out of mind and body” (Massumi 30).

step inside attempts to explore affect in this way: between body techniques and intercorporeality.

*

Late 2004, when I finished *step inside*, was also around the time Nicole bought me the Brian Massumi book, *Parables for the Virtual*, for my birthday, and I started thinking about going for a PhD. I was enjoying my own feedback loops between making and thinking and watching and doing, and could already see these as parallel to many aspects of who I am and how I operate in the world, and to Massumi’s parables on movement, affect and sensation.

Following *step inside*, my work and research began to converge around many of the ideas presented in this dissertation, and also to diverge across many co-original implicit body thematics. This work would include, but not be limited to, the prints, net.art project and installation that I will describe in Chapters 8 and 9.

In terms of another interactive exploration, I wanted to next create a space where body techniques between participants dispersed out and interfered with one another more literally, where movement and intercorporeality and bodies were all productively confused, rather than accented, in (and as) the emergent social order. In short, I wanted more collaboration; I wanted it to be physical on both sides of the screen. I wanted the co-mingling to itself be embodied, not just responded to by a few performing entities.

The proposal for *undertoe* (in progress, see Figure 35, page 212), a collaboration with New York-based artist Greg Shakar, came out of this desire. While the project is still in the research and development phase, the thinking and technical research has been informed by, and simultaneously informed, the writing of this dissertation.

From my web site:

undertoe is a fully immersive, interactive environment which traces the invisible vibrations of participants' footsteps visibly into a pool of water above their heads. Wherever the viewer steps, water ripples out from directly above where their foot landed. Soft light passing through the undulating water illuminates bands of light and dark on the space's walls and floor. As more participants cross the threshold into *undertoe*, their waves disperse and dissipate over time, interfering with one another, and emerging as ever more complex waveforms.

undertoe is the experience of walking on water and watching yourself from beneath the surface. It re-presents the imperceptible currents of vibration our bodies unwittingly produce; these are sensed by the piece and transduced into water – a medium that slows down and re-embodies this resonance as perceptible. Our sweeping effects slowly creep across the water's surface, and perform potential interactions with other bodies in space.

undertoe is an experiment in material memory, shared affectivity and the realm of the intangible....

The [*undertoe*] sculpture itself is a suspended blue tank, four by seven meters, in an even larger room with wooden floors and a marked-out interactive area. The space is charged, light refracting through the water, revealing its surface tension. A first step across the threshold onto one of the interactive pads results in a faint hum, and then waves in the water overhead. As the water ripples out, light bands itself across the room, redoubling its energy. Each step produces another hum and more waves just above where you step. If you stomp harder or softer, the waves themselves seem to form longer and shorter ripples - each combining and reforming with the last. You can tiptoe or jump, fall or run.

If more participants enter the space, the moving water in *undertoe*'s tank erupts outward from them, seemingly taking long strides towards you across the room. You can respond in kind, using the floor to send out signals that answer or disrupt, or you can venture a more collaborative effort; two or more carefully choreographed individuals working in tandem, whether from across the room or side by side, can create improbable and beautiful formations in the body of water above. The

constantly changing light and shadow in the room only act to accent the delicacy of your collaboration...

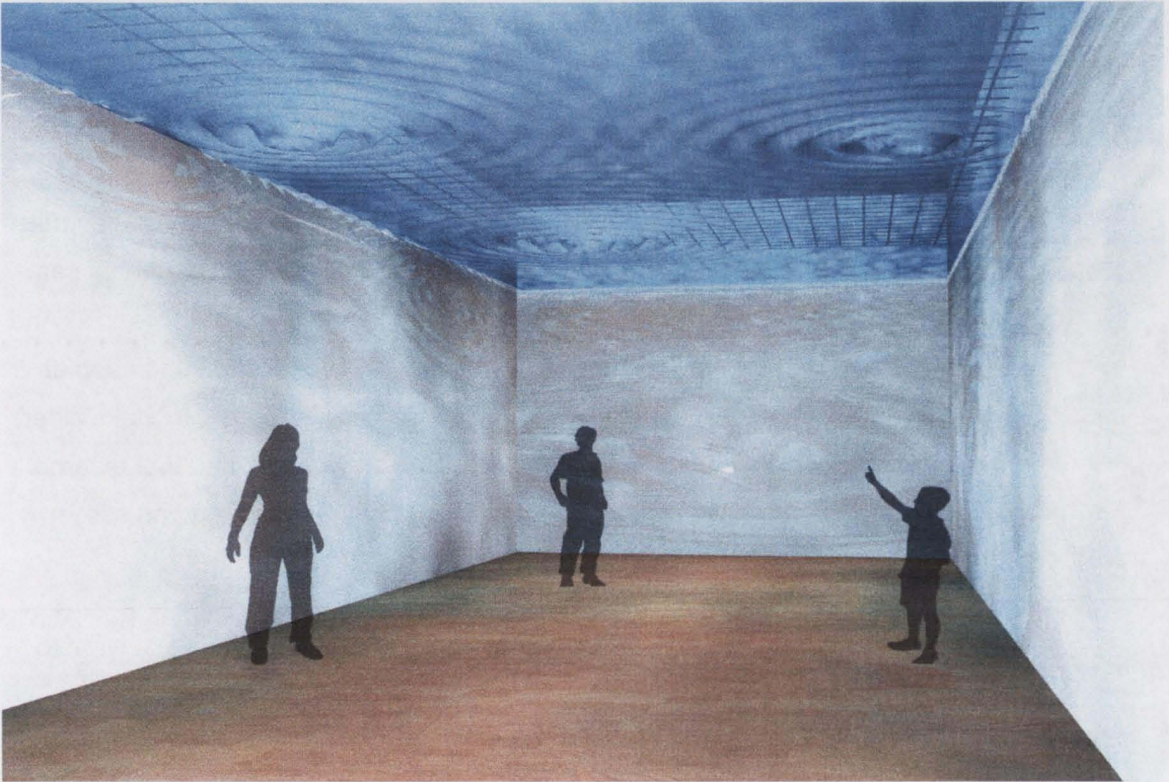


Figure 35, sketch of *undertoe* by Greg Shakar and Nathaniel Stern
Interactive and Immersive Environment, tank dimensions: 4 x 7 meters, other dimensions variable

undertoe's participants may experience it as a moving landscape, an enveloping kinetic sculpture, an intimate collaboration, a complex and elaborate dance, or a playful game of tag. (Stern, *undertoe*)

Although I can only imagine how participants will play out the space of *undertoe*, the performance it proposes to engender is clear. It very literally asks us to investigate how bodies per-form – are dispersed, enacted, entwined, interfered, differentiated, shared and continuously embodied – with each other. It is, it makes, and it re-presents our moving bodies as, and in, our emergent social structures.

I'm admittedly a little amazed that *undertoe*, and a few other works – some of which will be written about in the remaining chapters, some of which are outside the scope of this research – emerged amidst the writing of this dissertation. Of course, as writer and artist and researcher I am consistently thinking and experimenting and making, in whatever way is possible at the time. But my performances are always tempered by the stage on which they take place. In this dissertation, for example: I have my required 'lit

review' which takes up much of the document and so the case studies are fewer than I would have liked, and read through the chapters and thematics that I could fit into the larger document;²¹⁵ and with this autoethnography, the necessary 'justification' for its presence takes up more space than the actual narrativization of my practice, and only covers that which is relevant to the discussions that came in the chapters before. With regards to my body of artistic work, and my amazement at the emergence of new pieces, I simply spent very little time in the studio while slaving away over books and notes and Microsoft Word as try to become Dr. Stern. My practices feed into one another, of course – words mean as much to me as does touching and thinking about the art materials I am comfortable with – but there are only so many hours in the day, week, month, year.... And most of what little free time I had in my two years in Dublin was spent changing nappies and going to the park. I'm not complaining – Sidonie is amazing – but want to make clear here that *my* performance is not exempt from its own stage's influence, and that external factors are always infolded, always shaping the topology of my research and artistic practice.

I realize as I write this that perhaps Nicole is right. Post-Sid, maybe I just want to make 'pretty pictures.' On many levels, *undertoe* is a beautiful thing as an art object / concept, an exploration of the wonder in emerging and developing relationships – embodied or otherwise – between people and the ways they affect one another and the world around them. Perhaps its dispersions and interferences, the little details of its erupting and entwining waves that are so numerous and glorious that we can only see them in bits at a time, could be thought to re-present all the influences and stories, both present and missing, alluded to much earlier in this section. Its beauty is in what we feel and know and see, and in what we know we cannot feel or know or see, in and of the spaces between.

I'm sure you (my readers) can "relate." The implications are wide open.

²¹⁵ Of course, one of the main goals of the dissertation is to open up possibilities for future case studies and thematics, by myself and others, which will continue beyond the dissertation.

8 Implicating Art Works

8.1 Introduction

This chapter revisits the larger field of digital and new media art, first reviewed in Chapter 2, through extensive case studies. Whereas Chapters 4 through 7 utilize the implicit body framework for intensive case studies of interactive art and embodiment, this chapter looks at the possibility of an implicit body approach to 'non-interactive' art works, visiting such pieces briefly and in series. Throughout this dissertation, notions of interactivity, embodiment, performance and relationality, among others, have been problematized and examined, while still maintaining the simple definition of interactive art put forward in its introduction: the required physical activity of a viewer-participant in order to fully realize a work. One of this chapter's aims is to investigate art works that intervene in those very same categories – including interactivity itself – despite the fact that they do not fit this precise definition of interactive art. It problematizes this dissertation's own interpretation of 'interactive art' in order to broaden the scope of where an implicit body approach might be deployed to critically analyse, and better understand, embodiment and interactivity in and through contemporary art.

The work I am calling 'potentialized art' – which will be described at length, with examples, in Sections 8.2 through 8.5 – falls within the expansive rubric of digital art, and has in common with interactive art its use of technology to invest in action, affect, embodiment, performativity, transformation and/or materiality. Where they differ is that rather than being inter-active in the sense that the *viewer's* embodied participation is integral to the work's existence and/or completion within the gallery or exhibition space, potentialized art is either inter-active and performative in and through the *artist's* production, and/or it is *processually formed* through some kind of technically mediated performance. One excellent example of a potentialized art work is William Kentridge's series of stereoscopic and performative prints / light sculptures, first discussed in Section 2.6. Here the work is not 'finished' by a viewer-participant as is the case with interactive art, but nor is it a 'complete' or explicit object in itself; the entire series is, rather, an ongoing and iterative record of movement. Here we see, literally 'see,' the co-emergence body and world and work(s) of art. Another example is Stelarc's *Ping Body*, Section 2.8, where network activity transforms the piece over time. Audience members do not complete the work through their embodied interactions, but rather transform it indirectly, through how they surf a web site. Potentialized art works such as these are manifest as a kind of document, documentation, of an ontogenetic and per-formed process. In

Kentridge's case they exist as an continuous set of print objects, and with Stelarc, as a performance (and its performed documentation online). Although potentialized art differs greatly from interactive art, here an implicit body approach – if not an adapted version of the implicit body framework – can be applied in order to better understand embodiment, interactivity, new media, and how art relates (and relates to) all three.

Section 8.2, "Implications," follows with a short case study of Gordan Savicic's ongoing performance piece *Constraint City*, which is used to help define more lucidly what I am calling "potentialized art." Sections 8.3, 8.4 and 8.5 – "Vestigial-Vision", "Tangible-Temporality" and "Virtual-Performance" – each give brief examples, in catalogue-like fashion, of three potentialized art works and how they could be analysed with the implicit body approach. These short case studies, in this chapter categorized by just one of many implicit body thematics that each might beneficially be examined with, are intended simply as examples for opening up new possibilities – with not just interactive, but potentialized, art – in thinking through digital art and new media as it relates to the implicit body. They were chosen because of their diversity in when, where, why and how they creatively explore digital media.

By attempting to examine "non-interactive" work with the implicit body approach, this chapter aims to gesture towards a discourse and corpus larger than the dissertation itself. It looks to the future of new media criticism and philosophy by signalling how the implicit body may inform, perform and transform how we understand the incorporation and implications of embodiment and interactivity across the multiplicity of disciplines that constitute contemporary digital art.

8.2 Implications

Gordan Savicic, who lives and works between Vienna and Rotterdam, is a self-proclaimed games developer, electronic practitioner and social-circuit-bender with a mostly (and, likely, purposefully) obtuse web site.²¹⁶ His work tends to interrogate our relationships to technologies, our communications media, and each other, and so how he presents himself – as a personality – to the art world at large and through said technologies and media (e.g. online), reflects the provocative nature of his art.

²¹⁶ See <http://www.yugo.at/processing/>

Savicic's *Constraint City* (2007 and ongoing, see Figure 36, page 217) is a continuous performance that, in many ways, inverts Theodore Watson's *audio space*, the interactive art work that encourages moving and noise-generating viewers to simultaneously explore and construct an aurally resonant and physical space.²¹⁷ Where Watson invites his participants into the pleasure of play (Watson, Info), Savicic's work generates pain and bruising; while Watson uses the sounds and bodies of his performers to create and shape space, Savicic harnesses alternative spatial interactions outside of his control in order to inflict pain upon, and distort, his own body.²¹⁸

Subtitled "the pain of everyday life," in *Constraint City* Savicic adorns himself with a corset whose straps are attached to high torque servo motors. The corset can be activated to painfully tighten around his bodice with a simple electronic command to the motors. He then uses a hacked gaming console to detect any enclosed and encrypted wireless networks in close proximity. The higher the strength of the signal, the tighter his jacket becomes. Thus, says the artist, "Everyday walks between home, work and leisure are recompiled into a schizogeographic pain-map" (Savicic). Here it is not a participant viewer who forms the body and world through their interactions; but it is, rather, the interactions of the outside world intervening on the per-form-ance of the artist's body.

Savicic calls this still ongoing work a

city-intervention and a digital art performance addressing public and private space within the realm of everyday constraints. It resembles an urban interface for an invisible city, an architecture which is subconsciously perceived and which constantly oscillates as [a] resonant landscape... consisting of electromagnetic waves....(Savicic)

Here, the "intangible reality" of the telecommunications-activated urban space is mapped to Savicic's skin, forcing him to physically experience "the codes of the new digital architectures" (Canonico). The outcome of his city walks "provokes an emergence of a city-shaped body" (Savicic).

Savicic does not only map the outside world onto his body as such, but also records his own movements in the city as a result. Using a Geographic Information

²¹⁷ See Section 2.3.

²¹⁸ Another contemporary interactive work that inflicts pain on the body is Volker Morawe and Tilman Reiff's *Pain Station* (2002-2003); this is a pong-like two-player game that electrocutes its players in real-time when they do poorly. See <http://www.painstation.de/>

System, he keeps track of his everyday walks, how his routes change both over time and on individual days, depending on his moods, desires and plans in relation to the encrypted networks he has become aware of in the landscape around him. In other words, while the invisible electromagnetic city is imposed upon Savicic's body, he adjusts his ongoing performance of and in the city in response, and the two, together, co-emerge as new formations from and of their relation. The city is mapped to his flesh, and his body and movements re-map the city in kind. They are in continuous and reciprocal development.

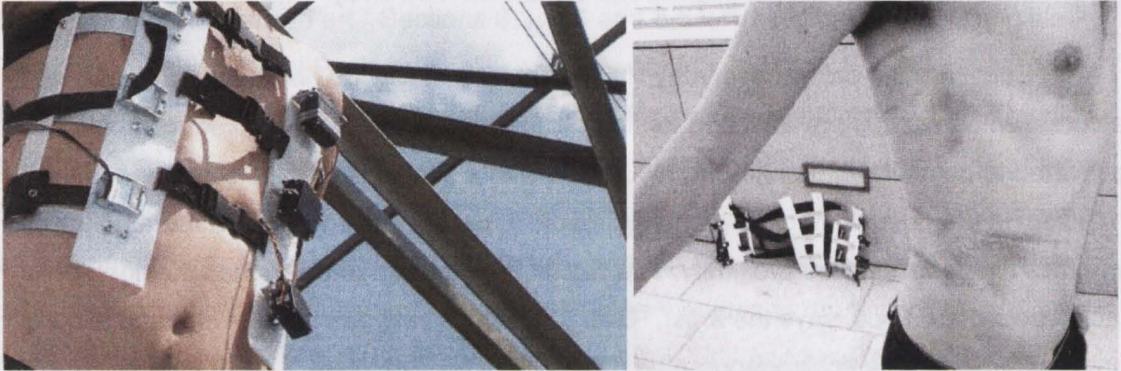


Figure 36, *Constrain City*, 2007 and ongoing, by Gordan Savicic

Savicic's *Constraint City* is an almost ideal example of potentialized art. It is clearly *not* an interactive art work; it does not set up an implicit body that is performed by the viewer, which this dissertation has argued is integral to, is in fact the most fundamental part of, interactive art. Yet despite this lack, it is also not an explicit body performance. In historic pain performances pieces like Chris Burden's *Doorway to Heaven* and *Transfixed*, where the artist electrocuted himself and crucified himself to a car, respectively, or Stelarc's suspensions, discussed in Chapter 2, the artists intentions were to performatively unfold the taken for granted signs of the body-image. *Constraint City*, on the other hand, is an intervention in the relation of body and world, the body-schema, and thus could benefit from the implicit body approach, from a reading that co-mingles embodiment and interactivity. In this case, however, it is the body of the artist that is the locus of interaction and thus embodiment / the world / relationality.

Sections 3.4 and 3.5 of this dissertation argued that interactive art works set up "situations," use technology to rig up spaces open to an "event," to create "potentialized contexts." Following Brian Massumi, it maintained that the event is "composed of two interacting subsystems" that "resonate together" and follow "entirely different rules of formation" (Massumi 26); interactive art utilizes new media to foster spaces ripe with potentiality, spaces that put quotation marks around the body and world's continuous co-

originality and co-transformation. This section argues that while non-interactive pieces such as *Constraint City* do not and cannot accomplish this same thing, they do document an ongoing process of transformation, revealing an event's co-emergent properties through iterative – ontogenetic and/or processual – records. They add to the discussions of relationality, emergence, embodiment and interactivity that this dissertation is invested in.

In *Constraint City*, Savicic documents his per-formed body in photographic images, and in relation to a local mapping of encrypted wireless signals. Another potentialized art work might, for example, see the birthing and transformation of digital prints through performances on the landscape, the iterative and temporal transformation of electronic music based on how we hear it over time, or the chronicling and transformational remaking of new media-based relationships between the internet and real world – all of which are types of works which will be discussed later in this chapter. In each case, the artist does not create a potentialized context, but rather, potentialized objects that exist in images, video, audio, installation or other forms. These 'objects' are precisely not objects in the sense of complete and standalone works of art. They are, rather, evidence: traces of a performance, of an (ongoing) event of emergence, potentialized through their accent on the past and future of that "substanceless and durationless moment" of the event (Massumi 58). The continuity of an event is implicit in the document – the object which is not an object – of potentialized art; the 'work' exists as more than the thing in front of the viewer, as a reference to something bigger than the sum of its parts. It is, in other words and to allude to another formation discussed earlier in this dissertation, a topological figure.

The potentialized art works discussed in this chapter have been birthed through performance, transformed over time and/or remade in the network. They are full of potent potential because of the per-formed and relational processes in which they were made or continue to be remade. If, as discussed in Chapter 3, explicit body art puts Zeno's stop points in quotes,²¹⁹ and implicit body art does the same to the movements between those points, then potentialized art could be considered a product of investigating those movements between. Potentialized art *is* the implied body's quotation – out of context, but still full of potential; it is not a static body in quotes that is interrogated explicitly, not a moving body in quotes intervened in implicitly, but iterative documentation, quotations, of

²¹⁹ See Chapter 3 for more on Zeno's arrow and how it relates to embodiment and explicit/implicit art.

a moving, co-emergent and implicit body. If interactive art asks us to perform relations, then potentialized art comes into being as a result of performing such relations. It is the citation that comes from a re-situation – the quotable quote, the implicit body aphorism, substantiated as an art work. Potentialized art may thus be actual or virtual, static or variable, matter or energy. Like this dissertation itself, it is an attempt to serialize and qualify “movement, sensation, and... experience” (Massumi 4).²²⁰

It could perhaps be argued that Fluxus performance, the happenings of the sixties, butted up against the impossibility of documenting an ineffable art event similar to those described in this section. But potentialized art is not documentation of this kind; it does not attempt to capture the essence of an interaction in the frozen time of stale documentation. Rather, potentialized art is an ongoing work, where a document/object/thing contains traces of its own performance, includes elements of potentiality through hints of past and future enactments. Potentialized art uses technology to show repetition, with a difference, to not only reveal, but also embody, transformation. Potentialized art is a manifestation, several manifestations, of that which is implicit. The following three sections will give short samples of potentialized art, and briefly communicate how they might be read with an implicit body approach.

8.3 Vestigial-Vision

For the purposes of convenience, the following sections have grouped nine succinct case studies into three newly introduced implicit body thematics. These are each merely suggestions for one possible reading of the individual works and, like all art presented in this dissertation, the pieces might be beneficially read through several other thematics. In addition to helping to develop the implicit body approach and the concept of potentialized art, this breakdown has the tangential benefit of expanding the ongoing list of implicit body thematics. This section begins the case studies with the Vestigial-Vision thematic: art works which intervene in the co-emergent relationships between embodiment and looking.²²¹ Works such as David Rokeby's *San Marco Flow* (2004) and Erwin Driessens and Maria Verstappen's *Tickle Salon* (2002), for example, re-present the vestigial traces of movement either with or over the body to continuously map out emergent and relational ways of seeing cities and bodies, respectively; and in my own series of performative digital prints, which I affectionately refer to as *Compressionism*

²²⁰ See Section 3.1.

²²¹ For more on embodied notions of looking, and the emergence of perception, see Section 2.6 and Chapter 2 more generally.

(2005 and ongoing), I birth visual images in and of the relation between my body and the landscape. The potentialized art works that these processes create invite an implicit body approach to interactivity and embodiment.

David Rokeby was first introduced in Section 2.1, along with his interactive installation, *Very Nervous System*. His potentialized art work, *San Marco Flow* (2004, see Figure 37, page 222)²²² visually captures the ongoing movements of both willing and unwilling participants on a piazza in order to dynamically fabricate a continuous alternative view, in the form of a two slowly shifting video image projections. How the city's participants move in relation to San Marco, which commissioned the site-specific work, genuinely transforms what we see in the image of the city; this transformation has the power to influence not only what, but also how we see, and potentially, how we look.

In Rokeby's *San Marco Flow*, the artist utilizes a high-resolution digital video camera to capture real-time images on a piazza in Venice, Italy; his software only redraws that which is moving in its two projections. These images are, "in effect, lit by animate presence; things that are not moving are invisible" (Rokeby, *San Marco Flow*). Slowly moving bodies generate saturated and pixelated artefacts, and rapid motion causes sharp trails like a multitude of lines in the sand. Says the artist, "Walking pigeons leave worm-like traces. Gathered people abstract themselves through their shifting motions. Tour groups flow across the image like a river" (Rokeby, *San Marco Flow*). The diptych is thus a map of recent activity.

The left-hand image in the work leaves longer-lasting trails behind each movement, and so acts like a "very long exposure image that develops visibly over the course of several minutes" (Rokeby, *San Marco Flow*), capturing and developing only the accumulate activities on the piazza, broadcasting a ghost-like rendering of San Marco's happenings. In the right-hand projection, these gestural markings fade more rapidly, revealing a rhythmic flow of life in Venice. These two video projection are mirrored in the centre, are "different readings of the same unfolding source material providing a kind of stereoscopy into the dimension of time" (Rokeby, *San Marco Flow*). Here, how we move and how we see co-emerge in and as an ongoing potentialized art work.

While, as asserted previously, *San Marco Flow*, could be read through various other implicit body thematics for critique, the Vestigial-Vision coupling opens it up to the

²²² Video available @ <http://homepage.mac.com/davidrokeby/smf.html>

discourse surrounding how movement and perception are interrelated. The Minimalist aesthetic that came to prominence in sculpture around the 1960s is probably best known for how its practitioners, inspired by phenomenologist Maurice Merleau-Ponty, were interested in explorations of embodied perception that went beyond vision (Bishop, *Installation Art 50*). Minimalist artists similarly attempt to exemplify an understanding that subject and object are inherently entwined. They are concerned with how we move and interact around and with basic, sculptural forms. It is precisely their uneventful and literal use of simple materials that, Minimalist artists and critics argue, have us reflect on our own full-body perception of, and co-mingling with, the work and space around us.



Figure 37, *San Marco Flow* video diptych screen grab, David Rokeby, 2004

Interestingly, Merleau-Ponty himself did not write about sculpture, but painting, and so it could be argued that Rokeby flips the Minimalist approach back towards that which inspired it. Here, the artist uses motion tracking software to continuously capture the embodied, abstracted and inter-active viewers in the space-time of the piazza, tracing the remnants of what they do and experience in their 3D environment, but on a 2D image plane. Rokeby then displays this dynamic video to the art work's ironically *inactive* viewers, watching from elsewhere, showing how we 'see' not only through our own continuous and embodied enactive perception, but through that of others as well.

Rokeby's accomplishment is itself inverted in Erwin Driessens and Maria Verstappen's *Tickle Salon* (2002, see Figure 38, page 224).²²³ Instead of viewers seeing the urban landscape through the lens of others' movements, in this piece an exploring tickle-bot rapidly traverses the contours of our skin, its movements dynamically plotting

²²³ Video online @ http://www.xs4all.nl/~notnot/TickleSalon/salon_youtube.html

the body as if it were a landscape. Here, a map of flesh emerges through and as the physical relationship between body and robot.

Driessens and Verstappen have an avowed interest in the concepts that support the implicit body – “complexity... dynamism... [and] transformation,” to name a few (Driessens and Verstappen, Introduction). But they are also amongst the early investigators of “generative mechanisms” that “circumvent the cultural and the biological limitations of human art” (Driessens and Verstappen, Introduction). Here, they argue,

spontaneous phenomena are created systematically... generated by autonomously operating processes.... The visual structures of most of [their] works do not represent anything but they arise from a logical and direct use of the medium and its formal visual means. (Driessens and Verstappen, Introduction)

The stated goal of *Tickle Salon* is to be an inexhaustible pleasure machine for those who love to be tickled (something both creators admit to). Participants lie, completely still, on a bed in the gallery, and allow themselves to be stroked and teased. There were two technical – and conceptual – innovations that needed to be achieved towards this end. First, Driessens and Verstappen had to create their own computer vision system in 3D space, one that allowed their tickle-bot – a steel marble with a skirt of yarn – to ‘see’ where it should lightly manoeuvre around its charge. Second, they needed a mechanical system for said activities.

They managed to create a feedback loop that accomplishes both of these feats at the same time, a generative mechatronic program whereby the exploratory movements of their bot feed back into the map that defines those very movements. Here a “suspended feeler,” a large metal marble with yarn skirting around it, is fastened to four monofibre lines (Driessens and Verstappen, *Emerging Tech*). Each of these lines is in turn controlled by stepper motors, which wind and unwind to adjust the lengths of the strings, and coordinate the feelers movements in 3D-space. Driessens and Verstappen call this their “inverted pyramid” suspension system (Driessens and Verstappen, *Emerging Tech*). The feeler can reach any position in three-dimensional space in between the bed and the ceiling.

At each moment in time, the feeler knows exactly where it is, by performing a geometrical computation based on the length of each suspension line. Whenever it touches the body, there is a slight loss of tension in one or more of the lines, which is

detected by sensors in the piece. In response, the tickle-bot both records the collision position in an ongoing virtual map of the body before it, and also halts its downward

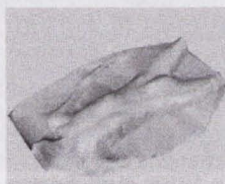
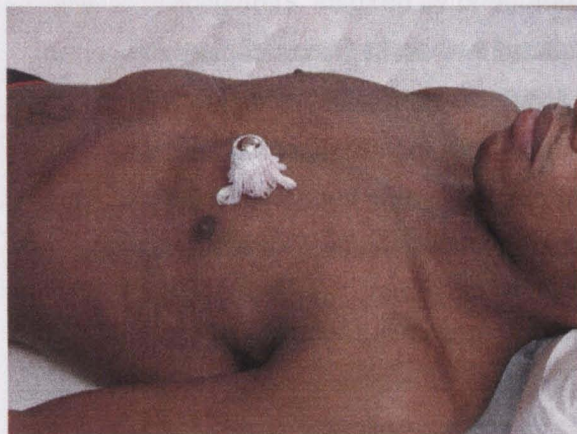


Figure 38, *Tickle Salon and corresponding body maps*, Erwin Driessens and Maria Verstappen, 2002

movement and, rather, trails across the surface of the skin. Gradually, the sensorimotor robot and its correspondent software develop a sculptural image of the body on the bed before it. It continues exploring, using this map to inform its ongoing performance / behaviour. So whilst creating, updating and displaying a representative body shape, it also gently strokes the participants' skin.

Tickle Salon's working parts "not only move the probe, [but] also serve as touch sensors" (Driessens and Verstappen, *Emerging Tech*). In sum, they've created an autonomous sensorimotor machine "that collects information about its environment," through "touching" and "feeling its way

around, adapting itself to whatever it encounters. The robot is blind, but it [per-]forms a mental map, which it uses to plan its motions" (Driessens and Verstappen, *Emerging Tech*). *Tickle Salon* 'sees' the body through its inter-actions with it, creating a dynamic map of skin-as-landscape. It prods and probes, leaving tickles and drawings in its wake; it finds embodiment – for both itself and the participant – through the vestigial traces of its continuous contact.

My own *Compressionism* series (2005 and ongoing, see Figure 39, page 227)²²⁴ is made up of archival and limited edition prints that are similarly invested in movement and materiality as part of their creation. Coming out of my work on *enter:hektor*, *stuttering* and *step inside*, in addition to starting research for *undertoe* and this dissertation, I wanted to try and bring visual thinkers, who did not necessarily wish to physically involve themselves with interactive art in the gallery space, into the folds of embodiment discourses and

²²⁴ Video documentation, downloadable catalogue, and slideshows of prints and images, all available online from <http://nathanielstern.com/art/compressionism/>

implicit body thinking. While it was gratifying to read and hear critics who began testifying to the performative and affective possibilities in my work,²²⁵ many of them – and many onlookers – merely talked about these possibilities, and did not themselves cross into the inter-active spaces that my installations provided. It was often only through *watching* other, more daring viewer-participants that many writers learned, and then professed, the pieces' value.²²⁶

One avenue of exploration often investigated to play out this conundrum of non-activity is that of unwitting audience participation – such as the piazza inhabitants in Rokeby's *Flow* or the network users that are mapped to Savicic's body in *Constraint City*. Here, 'viewers' are always interacting, willingly or not. With *Compressionism*, I decided to, rather, wrap the tensions between performance and pre-formism into serialized art objects; if viewers were merely looking at my work, then I would at least gift to them relational images that intervened in emergent categories – such as embodiment and vision – through an inter-active and performative process of production, and the resultant potentialized 'object.'

From my web site:

Compressionism is a digital performance and analog archive, where I strap a custom-made scanner appendage and battery pack to my body, and perform images into existence. I might scan in straight, long lines across tables, tie the scanner around my neck and swing over flowers, do pogo-like gestures over bricks, or just follow the wind over water lilies in a pond. The dynamism of my relationship to the landscape is transformed into beautiful and quirky renderings, which are re-stretched and colored on my laptop, then produced as archival art objects using photographic or inkjet processes. I also often take details from these images and iteratively re-make them as traditional prints: lithographs, etchings, engravings and woodcuts, among others. *Compressionism* follows the trajectory of Impressionist painting, through Surrealism to Postmodernism, but rather than citing crises of representation, reality or

²²⁵ See, for example, "Nathaniel Stern at Outlet" (Maart), "Nathaniel Stern at the JAG" (Sassen) and "The Future Makers" (Muller).

²²⁶ Certainly, as argued in Chapter 7, there is something to be gained from this watching; but it is not a replacement for movement itself.

simulation, my focus is on performing all three in relation to each other.
(Stern, *Compressionism*)²²⁷

In the catalogue for a 2007 solo exhibition,²²⁸ the Johannesburg Art Gallery's museum director, Clive Kellner, writes that I traverse "the material landscape in search of, and simultaneously birthing, images... in a series of poetic gestures often likened to that of Jackson Pollock's topographical painting" (Kellner). Here my performance with the scanner literally captures the inter-active relationship between my embodied movements and the landscape as successive and image-based moments of time. Art South Africa's Brenton Maart describes *Compressionist* images thusly:

The result is a series of zones that make up each image: bands that discern between adjacent times and successive views. At first the works seem abstract, but in moving closer the viewer is able to discern, in each band, elements of Stern's subject matter – ripples of water, flower petals, bricks, plastic bags, the sky – each rendered in a sequence that is both cubist and impressionistic. And within each band, and within the series of bands that make up each image, is an incredible and almost overwhelming sense of beauty; that almost religious feeling you get when you view an awesome artwork. (Maart)

²²⁷ Another interesting and somewhat interactive work that uses scanners to create dynamic images is Joachim Blank and Karl Heinz Jeron's *Scanner++*, a real-time installation that scans from below a glass bottom room (see Blank and Jeron). *Compressionism*, like Camille Utterback's *Liquid Time* (See Section 5.3), has sometimes been called a 'Slit-Scan' art project. "Slit-Scan imaging techniques are used to create static images of time-based phenomena. In traditional film photography, slit scan images are created by exposing film as it slides past a slit-shaped aperture. In the digital realm, thin slices are extracted from a sequence of video frames, and concatenated into a new image" (Levin).

In most cases of Slit-Scan, the artist will move an object in front of his or her capture device (like with *Scanner++*), rather than putting emphasis on the dynamism of the relationship between subject and object (as with *Compressionism*). Golan Levin (co-creator *Messa di Voce*, discussed in Section 4.1) keeps an online archive of contemporary Slit-Scan projects (*An Informal Catalogue*). Of special note in their similarities to *Compressionism* from this catalogue are Bryan Mumford's *Streak Photography* (ongoing), where he spins his object matter in front of his scanner; Romy Achituv's numerous time- and space-based interactive slit scan projects from 1997-1998; David Tinapple's hi-res scanner *Portraits* (2001-2005); Michael Cohen's *Image Stacks* (2003) that process temporal motion as Slit-Scan images over a background; Kurt Ralske's *Amstel* (2003) and *Electro* (2004), which sequentialize video frames through slits; and Daniel Rozin's *Time Scan Mirror* (2004) that logs 30 seconds of slit-scanning in front of / as a video "mirror". These are all documented on Levin's web-based catalogue.

²²⁸ *Call and Response* at Art on Paper Gallery (now Gallery AOP), Johannesburg, South Africa. See <http://nathanielstern.com/2007/call-and-response/> or <http://callandresponse.co.za/>



*Figure 39, various digital and hand-made Compressionist prints (2006 and ongoing)
Documentation photos by Nicole Ridgway*

My reworking of many of these digital images into more traditional printmaking forms is a further play on material relationships, time, iteration and how performance can change the ways we look and see.

In her essay “Picturing Uncertainty: From Representation to Mental Representation,” Barbara Maria Stafford asserts that contemporary theories of distributed cognition reveal what philosophers and visual literacy specialists have been saying for some time. Our mental representation of the world is not, she says, “an automatic matching of lines, edges and contrast to the neurons sensitive to these primitives” (461). Distributed cognition “manages to kill the ‘first-person perspective’ on experience, that is, the illusion that we witness it or see the world directly” (461). Stafford attests to the collaborative effort between the mind-body and the world, the relationship from which both body and vision emerge.

Stafford takes this further in saying that while the “optic nerve was once thought of as a simple vehicle carrying raw sensory data to the brain,” we now know that “it shapes its information in transit” (461). Our brains and sensory-perceptive cells, “in fact, [leap] out into the world” in order to collaboratively construct what we see. Kellner says that the implicit lesson of *Compressionism* is exactly this: a performance and co-emergence of the landscape / vision / the work of art.

What we see or experience as a result of [Stern’s] artistic process is a mediated outcome in the form of an image or print, which grew out of a performance in the physical world, and was later altered and transformed by the artist’s hand. One of the most interesting things about the work is the vestigial traces it carries of the various performances through which it arose.

This passage – which was a result of discussions between myself, Kellner and Nicole Ridgway²²⁹ – is in fact where the vestigial-vision implicit art thematic got its name. The performance between body and world leaves behind relational traces, which viewers are then asked to incorporate. The resulting image-world is a collaboration between the active

²²⁹ Ridgway edited the catalogue in which Kellner’s essay appears.

mind-body, the dynamic landscape, and the final audience.²³⁰ It is a series of potentialized art.

These works by Rokeby, Driessens and Verstappen, and myself all intervene in the co-original relationships between embodiment and vision. As Mark BN Hansen might say,²³¹ they go beyond the aesthetic perception of the object and engage the image as “image to the power of image”; Vestigial-Vision art works no longer belong only to the visual order of representation, and thereby shift “the ontology of... experience as such from an optically grounded spatiality in which object matches images according to a strict correspondence to a topology where image infinitely exceeds object” (Hansen, *New Philosophy* 205).²³² In other words, the body and what it sees each constitute one another and, added together, are more than the sum of their parts.

8.4 Tangible-Temporality

This section will visit three potentialized art works through the lens of the Tangible-Temporality implicit body thematic, intended to focus on interventions in the co-emergent relationships between embodiment and time. Brian Massumi touches on embodiment and temporality as co-emergent and potentialized categories when he critiques a Zeno paradox-like understanding of the latter. If time is understood merely as many “‘presents’ in succession,” says Massumi, than “Nothing exists outside of the march of the boxed-in present” (200). The problem with such an understanding as it relates to embodiment, he goes on to say,

is that if the body were all and only in the present, it would be all and only what it is. Nothing is all and only what it is. A body present is in a dissolve: out of what it is just ceasing to be, into what it will already have become by the time it registers something has happened. The present

²³⁰ It is interesting to note here that Nicolas Bourriaud, too, writes on the image as potentialized object in *Relational Aesthetics*. His glossary definition for images states, “Making a work involves the invention of a process of presentation. In this kind of process, the image is an act” (Bourriaud, *Relational* 111). And he more generally says, “The contemporary image is typified precisely by its generative power; it is no longer a trace (retroactive), but a programme (active)” (Bourriaud, *Relational* 69-70). On relational works that involve objects (paraphrasing Philip Parreno): “They display and explore the process that leads to objects and meanings. The object is just a ‘happy ending’ to the exhibition process” (Bourriaud, *Relational* 54).

²³¹ See Section 2.6.

²³² Up to this point, I’ve used the word ‘topology’ to mean the study of topological figures and features, and then used the words topological or topographical to describe such figures and features. Here, Hansen might be using this word as a noun that explains either a ‘study’ or an ‘object’ of topology, and I believe it is a purposefully ambiguous application.

smudges the past and future.... The past and future resonate in the present... The past and future are in continuity with each other, in a moving-through-the-present: in transition....

A body does not coincide with its present. It coincides with its *potential*.
The potential is the future-past contemporary with every body's change.
(Massumi 200)

A Tangible-Temporality reading of a given work of art gives primacy to the transitional and potentialized 'smudgings' between past and future. This thematic is intended to help unpack art that asks us to investigate, perhaps amongst other things, the continuous and relational feedback loops between time and performance. It will be utilized in this section to concisely look at Brandon Labelle's *Death of the Composer, or All Tongues Are Mothers* (2001), David Rokeby's *Machine for Taking Time (Boul. Saint-Laurent)* (2007) and John F. Simon Jr.'s *Every Icon* (1997) (alongside Arthur Ganson's *Machine with Concrete* (1992)).

Within the context of this dissertation, Brandon Labelle could perhaps be described as an 'implicit body sound artist,' whose work intersects well with not only the Tangible-Temporality thematic, but also Social-Anatomies and Flesh-Space. The following text from his web site, aptly titled "errant bodies," is worth quoting at length:

Sound is inherently and unignorably relational: it emanates, propagates, communicates, vibrates, and agitates; it leaves a body and enters others; it binds and unhinges, harmonizes and traumatizes; it sends the body moving, the mind dreaming, and the air oscillating. It seemingly eludes definition, while having profound effect. Sound teaches us, by always being temporal, spatial, and relational, that space is more than its apparent materiality, that knowledge is festive, alive as a chorus of voices, and that to produce and receive sound is to be involved in connections that make privacy intensely public. (Labelle, Labelle)

Here Labelle reveals a dedication to action, affect, embodiment, materiality, participation and, most of all, relationality. As an artist, he shows interest in both the social aspects of relational aesthetics that Nicolas Bourriaud puts forward,²³³

²³³ See Section 3.6.

and the embodied and material relationality that this dissertation uses as a foundation for the implicit body approach.

Labelle's 7 minute and 29 second (7:29) audio piece *Death of the Composer, or All Tongues are Mothers* (2007)²³⁴ was created as part of his *Social Music* radio series in 2001. About this project, he says that he wanted to "create a conceptual framework" that allowed for, in fact invited, "outside influence or social input in determining sound production" (Labelle, Social). *Social Music*, as a series and project, aimed to generate "musical and sonic activities that sought out public space, social interaction, spatial discoveries – found sounds, phenomenological tests, conversations between friends" (Labelle, Social). It was, itself, a social and interactive project that spawned several socially participative, digitally interactive and aurally-based potentialized art works.

Death of the Composer was chosen for reading through the Tangible-Temporality thematic in this chapter because of how it exemplifies transformation over and with time, and as an alternative to Labelle's own social reading of the work. Reminiscent of Massumi's temporal philosophies, Labelle's embodied speaker-listeners perform his track's continuous potential whilst quite literally on the cusp of the (virtual) present. For this piece, Labelle first read aloud – and recorded – his curatorial statement for *Social Music* (some of which is quoted above). Following this, he had five different volunteers individually listen to his reading and try to simultaneously repeat what they heard as it played back for them. He then remixed the recordings as an accumulation, and repeated the process until "a chorus of misreadings, mishearings and misspeakings appeared" as a per-formed audio track (Labelle, Social).

Labelle argues that with *Death of the Composer*, "'context' and 'art-object,' and by extension, 'audience,' converse" in and around "the random interplay of phenomena" and towards "the formation of what we could call a 'public'" (Labelle, Social). This section's reading of the piece through the Tangible-Temporality thematic argues, further, that in *Death of the Composer's* performative creation, the sensorimotor body of the speaker-listener is enacted as a continuous loop between the pre-formed recordings of the audio files' past participants, and the per-formed, new recording by its "current" (or rather, future) one. Here we are engaged as physical beings and becomings, simultaneously listening and stuttering over that which we attempt to repeat, failing precisely because of

²³⁴ Available for listening from <http://www.errantbodies.org/deathofthecomposer.html>, and henceforth referred to as simply *Death of the Composer*

the limitations of our flesh. Labelle says that the piece “shows how communication is never direct or without faults but always influenced by factors outside” (Labelle, *Sonographic*). The same might be said about what it reveals, unravels and disrupts in both time and bodies. Neither is direct or without faults, they influence one another and the outside, continuous smudgings of past and future, body and material.

David Rokeby's sculpture and installation, *Machine for Taking Time (Boul. St-Laurent)* (2007 see Figure 40, page 232),²³⁵ is a clear choice for the Tangible-Temporality implicit body thematic, and not just based on its title. A commission for the Langlois Foundation in Montréal, the piece explores a database of over 750,000 images in real time. Rokeby initially used two high resolution cameras on motorized pan-tilt mounts to capture 1024 images off each of the east and west sides of the Foundation building every day for an entire year. These sequential images encapsulate both the movements of the sky in relation to the earth, and the landscape in relation to the camera. In the installation, two computers randomly but fluidly “stitch together leisurely continuous pans through the city, staying true to the spatial trajectory but shifting unpredictably through time” (Rokeby, *MTT*). Rokeby explains that sometimes the software and compiled moving image stay “on one day for a while,” allowing viewers to “follow the micro-narrative of a stroll through the park. Other times it starts slipping through time, moving from day to day as it progresses from position to position” (Rokeby, *MTT*).

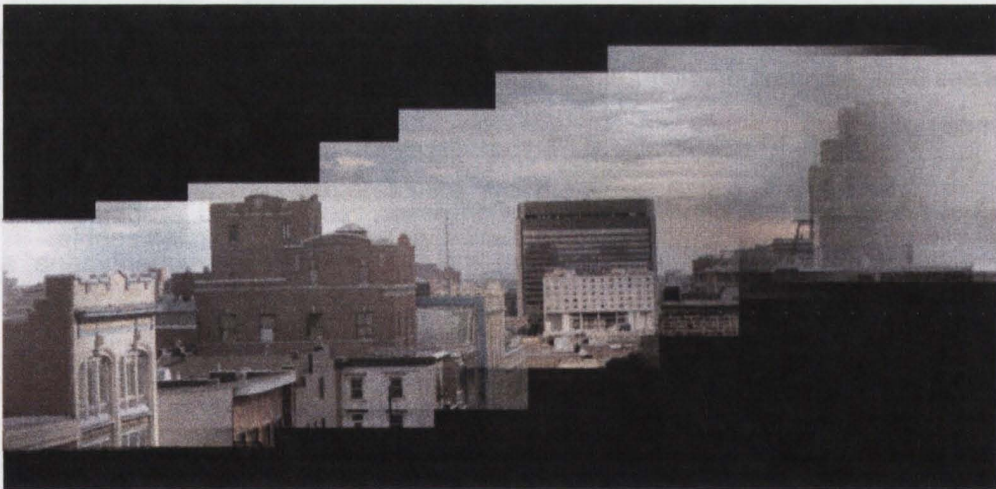


Figure 40, simulation of a path through the database in *Machine for Taking Time (Boul. Saint-Laurent)* by David Rokeby (2007), *Dynamic Sculpture and Installation, dimensions variable*

²³⁵ A similar work of the same title was installed at the Gairloch Gallery, Oakville, Canada from 2001-2004. Rokeby's parentheses in the title here mark the Boul. St-Laurent's site-specificity in this updated, permanent installation.

Rokeby's mechatronic cameras captured successive and mobile moments in the emergence of time, to illuminate the impossibility of a static material-temporality. The piece plays up how our minds and memories always traverse and jump around in time when recalling and remembering the past and our actions in it. But, asserts Rokeby, it gives this idea of the "fluid time travel of memory the immediacy of vision" (MTT). The movement of the camera's pan keeps the viewers' eyes "in the present, drawn to consider the changes in the image as though they were plays of sun and light, to interpret them as live, unfolding experience" (Rokeby, MTT).

Figure 40 (page 232) is a simulated image which displays one short path that Rokeby's software might display as it jumps through his database of files. What this simulation fails to convey is how the artist's stitched together video sequences have a wondrous and pulsating glow about them, a visceral throbbing of light and shadow that reflects the flux and movements of time in and as and with space and an embodied landscape.²³⁶ We experience the temporal city through its transitioning clouds and sun overhead, the changing of the seasons, the ongoing but disrupted and intermingled gestures of the earth and sky and their inhabitants. Watching a slow pan over an hour can feel like minutes or months or years in any given "moment," an unfolding of the potential of time found in the seemingly subtle movements of the camera and its surroundings. Jean Gagnon describes it very coherently:

In the space of a few seconds, we pass from spring to autumn or from summer to the end of winter. People and cars appear and disappear as do the leaves in the trees; the light changes in an unsettling manner.... Here, the present does not tick away with the seconds on the clock; it is instead a moment where images of the past are fused into a reconstructed memory. From the deconstruction of time is built a present where expectation is enriched with illusion. (Gagnon)

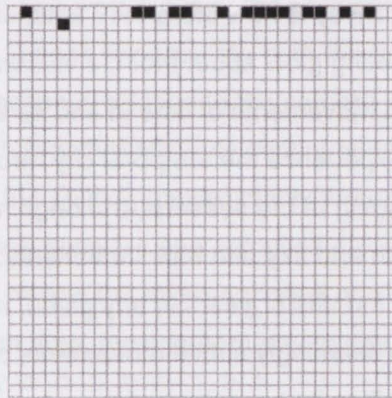
I would argue that Rokeby's *Machine for Taking Time* is neither a deconstruction of time nor enriched with illusion; it is, rather, time made visible in all its potential, intervened in as a sensible concept. The video we see flows linearly in space, accenting its undirected traversals through time. Here the smudgings of time and the landscape are composed as neither object nor concept, neither material nor category; they are both/and, relational.

²³⁶ See online videos of the installation at <http://www.fondation-langlois.org/e-art/e/machine-for-taking-time.html>

The work shows continuity between space and time, and like a topological figure, coincides with its own transformation.

Finally, inspired by conceptual and minimalist artists such as Sol LeWitt and Lawrence Wiener, new media practitioner John F. Simon, Jr. gained prominence in the late nineties for his unlimited edition Java applet, *Every Icon* (1997, see Figure 41, page 234).²³⁷ In a 1999 interview, the artist calls his piece an “activated idea” (Baumgaertel and Simon). *Every Icon* begins as a simple grid of 32 x 32 small white squares. In animated sequence, from left to right, top to bottom, it slowly fills each square with every gradation of white-through-grey-through-black until it shows every single black and white

Given:
An icon described by a
32 X 32 grid.
Allowed:
Any element of the grid
to be colored black or
white.
Shown:
Every icon.



Owner: Ken Goldberg
Edition Number: 12
Starting Time: April 3, 1997, 12:00:00

(c) Copyright 1997 John F. Simon, Jr.

Copyright 1997 John F. Simon, Jr.

Applet icon started

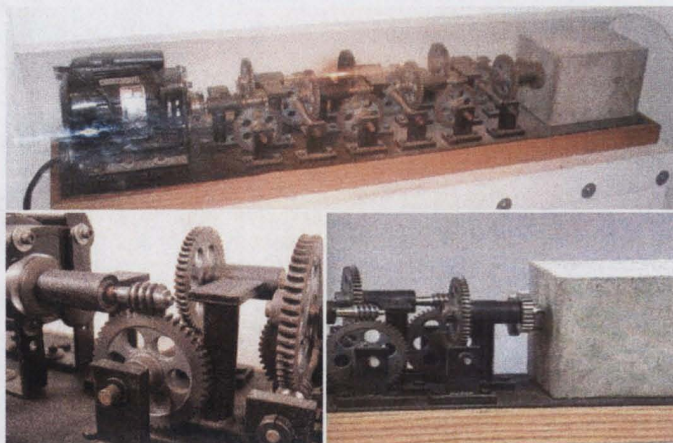
Figure 41, *Every Icon* by John F. Simon, Jr., 1997
net.art / dynamic and virtual print, 32 x 32 squares

combination of ‘images’ possible within its frame. It begins as an empty board, and then at a speed of 100 variations per second, fills in the first square, then the second square, then displays all possible combinations with these two squares (white, then 253 different greys, then black, in the first square with white in the second; white, then 253 different greys, then black, in the first square with the first level of grey in the second; white, then 253

²³⁷ Live editions of *Every Icon* are visible on many web sites all over the internet. Any Google search will return several from the edition, at various stages in their lifespan.

different greys, then black, in the first square with the second level of grey in the second; and so on until the second square has shown white, then 253 different greys, then black with each of white, then 253 different greys, then black in the first square), then all the combinations with the first three squares, then four, and so on. In other words, Simon's art work is a computer icon that "basically counts forward, from 0 to 10 to the 308th power," which, he brags, is significantly larger than "the number of atoms in the universe" (Baumgaertel and Simon).²³⁸ It takes about one year simply to show all possible variations on *Every Icon's* first line of 32 squares. Simon estimates that exhibiting all combinations on the first two lines alone would take approximately 6 billion years. By his calculations, it would likely take several trillion years before a recognizable image emerges from the grid and several *hundred* trillion years before every possible black and white icon within his confined square has been exhausted, and the icon goes completely black.

Simon's work could conceivably be described as a digital manifestation of mechanical art guru Arthur Ganson's kinetic sculpture, *Machine with Concrete* (1992, see Figure 42, page 236). Ganson uses the simple engineering-based rules of 'gearing down' from faster rotating toothed discs to slower and stronger ones in order to produce a machine that will "drive a steel bit into a waiting concrete slab some 2.191 trillion years from now" (Blume). In the case of both *Every Icon* and *Machine with Concrete*, the works live as their present *and* future (and past) selves, in a constant state of nearly invisible, yet extremely potent, transformation.



*Figure 42, Machine with Concrete, Arthur Ganson, 1992
Dynamic and Kinetic Sculpture, dimensions unknown*

²³⁸ Simon puts the number of atoms in the universe at 10 to the 80th power.

Simon's work, however, also lives as a potential sign – both of itself, and for everything else. At several points in time, the pixels of its grid will emerge as a legible image, for example, the folder or hard drive icons we see on every desktop computer. At various points we will see recognizable alphanumerical characters in *Every Icon's* matrix, or perhaps even a short text. The piece, by its very generation, references so much more than itself, both literally and metaphorically. "In contrast to presenting a single image as an intentional sign," Simon argues, "*Every Icon* presents all possibilities" (*Every Icon: Artist's Statement*). Additionally, where Ganson's sculpture presents physical time as grinding onwards, Simon's software is without physicality; it exists on a network of many machines, is performed, transformed and sustained *only* through its symbolically tangible movement in time. Ron Wakkary tells us that *Every Icon's*

value lies in the theoretical understanding of its existence to the point when it has defined its every limit and exhausted its every combination. At that time, several hundred trillion years from now, *Every Icon* will stop functioning.... If its computer life-support system can sustain itself, *Every Icon* will have lived in an ever changing and yet immaculate present. It will never appear the same nor will it ever deteriorate. (Wakkary)

Here, "computational promise is intricately linked to extraordinary duration and momentary sensation" (Simon). In other words, *Every Icon* performatively creates a life and a body; it gives corporeality to time and sign and the network, by continuously living in the potential of all three.

These works by Labelle, Rokeby and Simon all intervene in the co-original relationships of time and body / materiality. They call attention to both the physical and conceptual experience of time, and bring to bear how we, as people and as bodies, interact with, generate, and are in some ways generated by, temporal flow. Here we and time and the art are all potentialized, are all re-situated, un- and enfolding, in relation. In this way, through intervention and re-situation, Labelle, Rokeby and Simon ask us to expand our understandings of art, technology, performance, embodiment, temporality and transformation.

8.5 Virtual-Performance

The Virtual-Performance implicit body thematic puns on and refers to the more everyday usage of the word 'virtual' than that which Bergson, Deleuze, Massumi and other philosophical scholars use.²³⁹ It is intended for art that is on, or makes use of, the Internet – more commonly referred to as net.art. The Virtual-Performance thematic aims to interrogate interactive and/or potentialized art which intervenes in the co-emergence of bodies and/or materiality along with telecommunications systems.²⁴⁰ This section briefly describes and unpacks artist collaborative MTAA's *1 year performance video* (2004), Scott Kildall and Victoria Scott's *No Matter* (2008), and my own collaborative project with Scott Kildall, *Wikipedia Art* (2009). Each of these pieces is birthed, transformed and/or remade via implicit and explicit connections in the virtual space of the Internet.

The Brooklyn, New York-based "conceptual and net art collaboration" MTAA (M.River & T.Whid Art Associates – neither of which are the artists' real names) was founded in 1996, their aliases and naming mechanisms revealing a tongue-in-cheek attitude early on in their career, which carries through to this day.²⁴¹ The duo avers to produce "examinations of networked culture, the economics of art, digital materials, and the institutional art world [that] take the form of web sites, installations, sculptures, and photographic prints" (MTAA).

MTAA is part of both the first generation of artists working with code online in the late 90s and early 2000s, as well as in consistent dialogue with – and extremely influential on – the sometimes referred to as Post-Net Art or Net.Art 2.0 artists that now use online tools such as YouTube, Google, Blogger and/or Facebook towards artistic ends. One of their most well known pieces is *Simple Net Art Diagram* (1997, see Figure 43, page 238),

²³⁹ See footnote 5, page 14, for a contrast between Massumi et al's philosophical virtuality with the one defined by Oliver Grau.

²⁴⁰ "Networked Performance," a common phrase that is most used and promoted by the public net.art commissioners and writers/bloggers behind turbulence.org, advances a much looser meaning of the word 'network' than the one put forward in the Virtual-Performance thematic (e.g. several works featured on their site do not use the Internet at all, and instead intervene in, for example, 'real world' social or spatial networks), as well as a more everyday understanding of 'performance' (i.e. performance art or theatre in addition to interactive installation, and rather than the emergence analogy set up in Chapter 3). Turbulence's co-directors, Jo-Anne Green and Helen Thorington, would likely place the entirety of interactive and potentialized art within their Networked Performance label, and likewise, many of the works they write about in their extensive and fascinating (and ongoing) blog/catalogue could benefit from readings within various implicit body thematics. The name "Virtual-Performance" was chosen partially in homage to, as well as to differentiate it from, turbulence's ongoing contributions to the fields of interactive and networked art. See <http://turbulence.org/> and <http://transition.turbulence.org/blog/>

²⁴¹ See http://www.mtaa.net/mtaaRR/news/twhid/MTAA_naming.html

which concisely expresses precisely the im-material and purely connectivity-based existence of networked art. This piece has been referenced and re-mixed as part of many other art works, and in the title of several press pieces and shows, throughout the world for well over a decade; it, in many ways, represents not only MTAA's practice, but the fundamental ideas behind Virtual-Performance as well. Ultimately, net.art, like embodiment and the network itself, is of the relation.

Simple Net Art Diagram

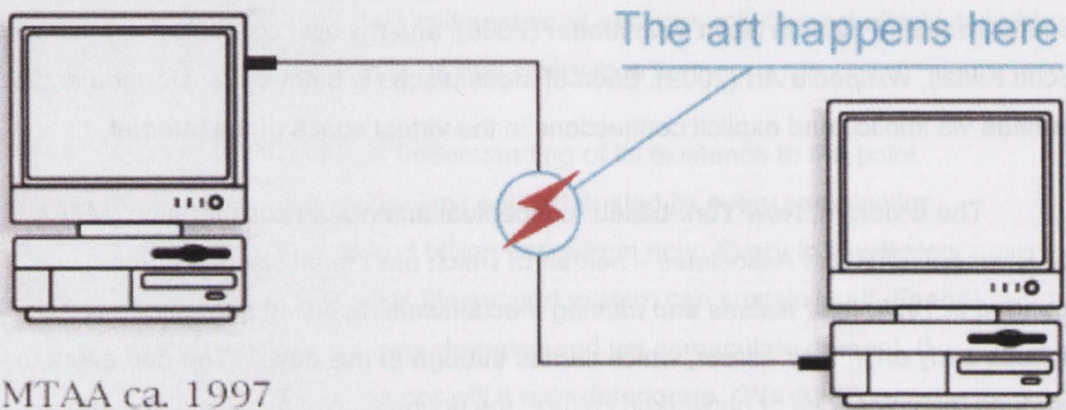


Figure 43, Simple Net Art Diagram, MTAA, 1997
Animated Gif, Print, EPS or Illustrator file – available for and in many printed and soft formats

Within MTAA's long list of works are several ongoing themes and trajectories, a number of which are explored in their continuing *Updates Series*. MTAA's "*Updates* resound seminal performance art from the 60s and 70s in part by replacing human processes with computer processes" (MTAA). For example, since 1966, Japanese conceptual artist On Kawara has made a series of 'date paintings' (called the *Today* series), each of which sees Kawara paint the date of execution – the date he makes the painting – in simplistic white lettering over a solid black background. MTAA's *onKawaraUpdate (v2)* (2007) replaces Kawara's "Zen-like devotion to his date paintings with an automated [software-based] script" in order to re-work its performance over time, and thus its meaning (MTAA).

MTAA's 2004 turbulence.org commission, *1 year performance video (aka samHsiehUpdate)* (see Figure 44, page 240)²⁴² takes on Tehching "Sam" Hsieh's *One*

²⁴² Piece still live and online at <http://turbulence.org/Works/1year/>

Year Performance 1978-1979 (also known simply as *The Cage Piece*) in a similar way. In the original work, Hsieh first shaved his head, then locked himself in an 11 1/2 x 9 x 8 foot barred cell in his studio on September 30, 1978. He disallowed himself from talking, reading, writing, listening to the radio or watching TV for an entire year. He wore a simple, white uniform with his name and the dates of the performance on it, and had his food, water and clothing brought to the cage, his waste removed. Hsieh invited an audience into the piece through, for example, open viewings of his cell, and ongoing, daily photographs that documented his actions. Said regular photographs showed the artist “reclining on the bed or squatting on a bucket toilet” and had the tangential benefit of revealing his “transformation from hairless to shaggy inmate” (Laster). Paul Laster describes Hsieh’s time thusly:

After three months of contemplating his existence, Hsieh began to look for faces in shadows, watch insects with intense fascination and pace the length of the cage. Thinking became the art. He imagined his bed in the corner as the confines of the cage and the rest of the enclosed space as outdoors. A daily scratch on the wall marked the time he had survived and the days remaining. (Laster)

Hsieh performs time with his own body, and turns it into a conceptual work – a sensible concept.²⁴³

In MTAA’s *Update*, they do not actually live in a cell, but rather created a database of video images where they perform themselves living in a cell (their studio). When viewers call up the *1 year performance video* web site, these pre-made clips are dynamically pulled from the server and edited together within the viewer’s Internet browser window, so each audience member sees a slightly different portrayal of the life of MTAA. The clips are organized in the database by time of day, and so the clock on any individual viewer’s computer will tell the art software to grab video of a time-appropriate activity: at night they may be sleeping; in the morning, they could be tapping their feet or making their beds, etc. Viewers can become ongoing participants in the work by signing up for a username and password, and the work / web site will log all the time they have spent actually watching M.River and T.Whid in their studio. After one year of actual viewing time by the participant – not one year from their first log in – dedicated watchers are rewarded: they get to view a final video only seen by those who have watched for one

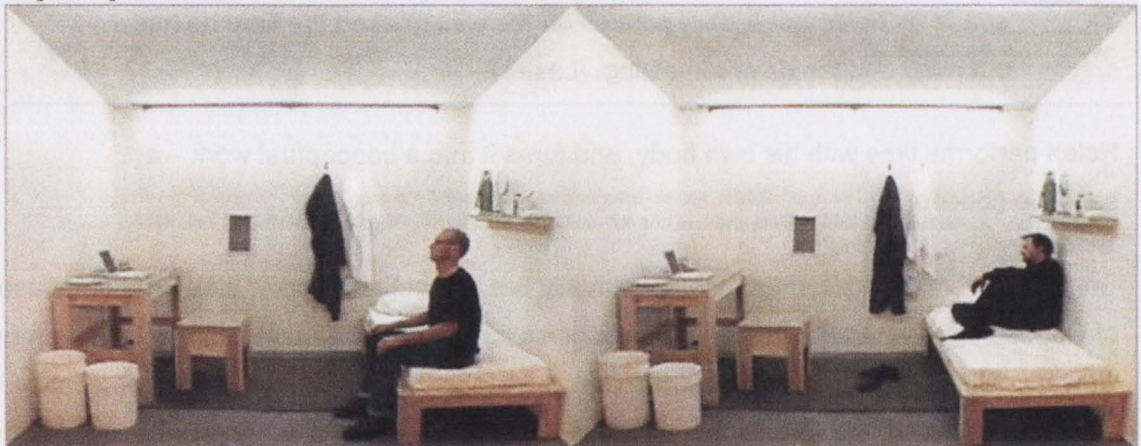
²⁴³ See Section 2.8 for more on Massumi’s sensible concepts.

year (perhaps someone unlocking MTAA from their cells?) as well as a downloadable copy of their unique, 1 year online viewing data in XML format (Extensible Markup Language). This data is simply a playlist, in order, of the video files watched by the viewer in question. It looks something like this (only much longer):

```
<playlist>
<video url="vid/twhid/anytime/exercise/twhid_exercise03.flv"/>
<video url="vid/twhid/anytime/bed_stare/twhid_bedstare01.flv"/>
<video url="vid/twhid/2afternoon/lunch/twhid_lunch02.flv"/>
<video url="vid/twhid/anytime/randomfill/twhid_randomfill03.flv"/>
</playlist>(MTAA)
```

According to the artists, this data serves as a collectible companion art work, where each is numbered as if it were a limited edition object, based on the number of 1 year viewers that came before.

1 year performance video — please watch for 1 year.



You have been watching for **00000043** seconds of a total of **31536000** seconds.

[LOGIN](#) to save your viewing time.

Note: Current time is not saved; once you login your viewing time will be saved.

[More info](#) on 1 year performance video by [MTAA](#)

Figure 44, screen shot from 1 year Performance Video (aka samHsiehUpdate), MTAA, 2004
Continuous, Networked and Dynamic video diptych with M.River on the left and T.Whid on the right

MTAA assert that in *1 year performance video* they've "transferred the onus of a 1 year commitment to the work from the artist to the viewer" (Background). The piece," they go on to say, "will be realized fully only when a viewer runs it for one year" (MTAA). The artists thus "mimic endurance without doing the labor," speaking back to "how our society,

culture, and the creative process has changed since [Hsieh's] original was created" (MTAA). In fact, MTAA publicly doubted that any viewer would ever complete the work.

Whereas Hsieh's original "was notarized by a lawyer to give it authenticity," MTAA are completely transparent about the fact that their *Update* is a total fabrication (Navas, 1YPV Review). Even the determined audience member, who is now responsible for the 1 year performance, can log in, leave their browser running, and walk away. As M.River puts it, "No one needs to suffer on this one. The failure is built-in at the front end" (MTAA). Interestingly, and despite this "failure," MTAA underestimated either the fascination people would have with their work, or the commitment of the general viewing public itself; as of March 2006, 25 audience members had watched the MTAA videos for over one year, and several others were on their way.²⁴⁴

Most readings of *1 Year Performance Video*, such as the one by Eduardo Navas of netartreview.net, concentrate on the "drastic changes in art production since Hsieh developed his one year performances" (Navas, 1YPV Review).²⁴⁵ In Hsieh's time, the art object was in question, and performance and conceptual artists were instead attributing value to cultural production and ideas. While MTAA's practice also places value on the conceptual frame of their work, Hsieh "had to be able to not work for [one year] in order to spend it making art. This position is of course at play if the artist's work in the studio is not considered work by the rest of culture, which is true in the United States" (Navas, 1YPV Review). Navas argues that there are very few artists, if any, who could make this kind of monetary/temporal commitment even once, much less several times, as Hsieh has done.

Navas says that MTAA point to, and flip over, the one year performance's monetary and temporal commitment. His careful exposition of this complex idea is worth quoting at length:

This commitment and most importantly cultural position is passed on to the online user in MTAA's update. Here, the user quickly realizes that one year is a serious commitment that the average person is most likely unable to perform; thus Hsieh's particular role as an artist is exposed and questioned not passively but actively, because the users are given the option to put in their own time at anytime. The users then need to

²⁴⁴ Information on viewers gathered from <http://turbulence.org/Works/1year/info.php?page=hof> and <http://turbulence.org/Works/1year/> in March 2006.

²⁴⁵ Several such reviews are available and linked from <http://turbulence.org/archives/04.html#mtaa>

decide why they would commit to an online activity, especially when this activity will in the end validate the artists who were commissioned the project in the first place. This inversion, this transparency that is pivotal to the online project exposes the role of the audience in any work of art. In Hsieh's projects this is not so obvious because he is doing all the work, and all the viewer needs to do is acknowledge the final product through documentation. (Navas, 1YPV Review).

While Navas' is a fascinating sociopolitical reading of MTAA's piece, questioning art and value and work in a productive way, an implicit body approach would instead concentrate on embodiment and relationality. *1 year performance video* could be read through the Body-Language thematic, with a focus on the emergent signs performed through MTAA's dynamic video clips; a Tangible-Temporality reading, where the work and audience and artists are refigured as continuously embodied through the time they spend engaging and enacted; or, as is done here, a Virtual-Performance thematic, which suggests that the work of the artists and audience (whether time- or Internet-based) are continuously embodying and transforming one another, through a relationship that exists both on and of the network, as well as in the physical world.

The Virtual-Performance reading of *1 year performance video* concentrates on how the work shifts in its instantiation both as any given viewer watches the dynamically compiled videos, and as more audience members complete the 1 year time frame. And said viewers' embodied relationships to their computer and the Internet continuously shift: they must leave their computers on over time, no longer shutting down or putting them to sleep as part of their daily routine; as they regularly sneak glances at the slowly incrementing clock crawling towards one year; as they sit back and watch their computers at a distance rather than utilizing them as productive work tools.

With *1 year performance video*, the online and fragmented connection is the performance, is the potential and is the improbable and unnecessary and – in the vast majority of cases – unfulfilled time it takes to complete itself. The piece ironically strips the art work's world of bodies: gone are the artists whose software generatively resounds Hsieh's original, and gone are the viewers who log on to the site, then go off to work, or to watch television, or to play outside. And so it is the network, the virtual relationship between these tele-absent entities, the potency of uploading flash files (MTAA) or logging in to the site (the audience) and performatively committing to exactly nothing, that gives the work its material flesh. Here there is no "explicit body" in the everyday sense of the

word, the work exists only through its implications. *1 year performance video* becomes a topological figure of disembodied relationships, network activity and time – an absent yet implicit body made only of connections, of its relationality.

Scott Kildall and Victoria Scott's *No Matter* (2008, see Figure 45, page 245)²⁴⁶ also plays with irony and materiality via the network; but rather than stripping bodies from all sides of our telecommunications wires, they give flesh to imagined, virtual and data-based online art objects. Here they take "potential objects," things created and maintained only in the virtual space of the Internet, and remake them with physical materials.

More broadly in his work, Kildall attempts to collapse relationships between "producer and consumer, viewer and viewed and simulated and real" (Kildall, Statement). His most well-known art works take place in the virtual, networked, 3D environment and community, Second Life (SL). This is a fairly open software and population, where anyone can join for free, then log in to construct personal avatars, landscapes and buildings; these SL members (called 'residents') engage in online correspondence based on real-life, ranging from sexual or platonic relationships to academic lectures or panel discussions. Residents – there are millions of registered users, with approximately 70,000 logged in and 'in-world' at any given moment – go clubbing, purchase land and homes and art, and can convert money from real world currency to Linden dollars, and back again.²⁴⁷

Kildall claims an interest in simulated worlds, however, "precisely because they fail to reproduce reality. Besides the disembodied actions and 3D graphics, there are many other layers of socialization and economies that diverge from real life" (Kildall and Quaranta, Interview). He says that he is interested in examining how we "relate to the dissonances in the simulated – whether it is as a viewer, performer or active participant" (Kildall and Quaranta, Interview). In SL, he argues, the "combination of simulated space and massive social interactions is unique. Between a whole other concept of space and a semi-anonymous relational environment, there are many facets beyond the reproduction of reality to artistically explore" (Kildall and Quaranta, Interview). Kildall's quotations here, from an online interview with Domenico Quaranta, contain echoes of the socially participatory work that was differentiated from interactive art in Section 3.6, but his

²⁴⁶ The *No Matter* project is also a turbulence.org commission, and the web component is live and online at <http://transition.turbulence.org/Works/nomatter/>

²⁴⁷ Linden Lab is the maker of Second Life, and so the currency is called L\$, or Linden dollars, in-world.

concentration on technology, especially the supposedly disembodied and avatar-based world of Second Life, make him a fascinating case study with the implicit body approach.

Kildall is, for example, a founding member of *Second Front* (2006 and ongoing), an avatar-based performance art group in SL. Second Front's nine members have taken on a platform whose medium is traditionally the body (performance art), and used a pointer, the avatar, some disembodied and conceptual code, to explore meaning and performance in the datascape. Here, they ironically ask where embodied and performed meaning is found without a body. And Kildall's *Paradise Ahead* (2006-2007) contains echoes of MTAA's work, but rather than resounding *Updates* where the 'work' is done by technology, he "remediate[s] iconic performances," with avatars instead of bodies, blurring "the line between document and event," thus creating potentialized art (Kildall, *Paradise*). These works intervene in both the original performances – the embodied artists' original works – and the iconic images they have become for the art world.

Kildall and Victoria Scott have worked on more than one collaboration together, although the latter mostly concentrates on visualizing "social and psychological states" through "large-scale installations, objects, prints and audio works" (Scott). Their turbulence.org-commissioned *No Matter* is Scott's first foray into both Second Life, and implicit, art. She and Kildall proclaim that the piece is "an installation of 'imaginary objects' made both in Second Life and physical space" (Kildall and Scott, *No Matter*).

First, the pair publicly invited proposals for commissioned imaginary objects to be constructed in Second Life. They asked for SL builders, architects and coders to create 3D objects that "appear repeatedly in myth [and] literature, in thought experiments, popular culture and as placeholder objects in language." In this call, they listed items like the "Holy Grail, Time Machine or Schrödinger's Cat," which "do not exist in the material realm, except as replicas" (Kildall and Scott, *No Matter*). Such objects, Kildall and Scott maintain, "embody the tension between the ideal and real" (Kildall and Scott, *No Matter*).

Second Life, the artists go on to say, already traffics in objects that are, to some extent, imaginary. Although many of them are based on real life (to SL residents, "RL") counterparts, they exist exclusively "in-world... cannot be exported... [they] remain in a purely virtual form" (Kildall and Scott, *No Matter*). These objects are displayed in a virtual gallery in SL so that resident avatars "can climb inside the Trojan Horse, open Pandora's Box and teleport through a Portable Hole" (Kildall and Scott, *No Matter*). This virtual re-making of objects that were never really there, and the opportunity to inter-act with them, is a doubly doubled gesture towards rethinking materiality and relationality.

In the second phase of *No Matter*, Kildall and Scott “smuggle” out the SL objects “as digital plunder, amassing them into a real life trophy room of ontological treasures” (Kildall and Scott, *No Matter*). This “smuggling” was accomplished by running software on the SL primitive 3D forms to turn them into flat paper patterns, which were printed and folded into models, for display on fake wooden plinths in a traditional gallery space in the physical world. In phase three, a website “ties these two worlds together as a catalogue of economic relations and study of value” (Kildall and Scott, *No Matter*). Here the commissioned SL builders are listed alongside documentation of their objects, patterns and RL counterparts, as well as what the artists paid for their labour and time.

Big Dumb Object
Book of Love
Brain in a Vat
Can of Worms
Cure of Obsession
Dilithium Crystal
Excalibur
Flying Carpet
Flying Saucer
Holy Grail
Hypercube
Isaac's Wings
Infinite Improbability Drive
Kryptonite
Magic Potion
Maitake Talcum
Missing Link
Mordeth
Pandora's Jar/Box
Paper Tiger
Perpetual Motion Machine
Philosopher's Stone
Portable Hole
Picture of Damien Gray
Pig of Gold
Rhygar
Red Herring
Rosebud
Sampo
Scavenger's Cat
Seven-League Boots
Tall-Talk Heart
Ten Commandments
Tuna Machine
Tree that Fell in the Forest
Trojan Horse
Turing Machine
Wreath of Fate
Winged Pterodactyls
Yellow Submarine

Trojan Horse

Avatar Name: Morn Lival
Cost for build: (L) 4000 (USD) \$14.90
How long did it take: 25 hours
Hourly Wage (USD): \$0.60
Location: Mexico City, Mexico
Real Life Occupation: Student
Website: [none]

Back ----- Next See objects in Second Life/ Ars Virtual Gallery

Object Description:
In Virgil's epic poem, the Greeks give a giant wooden horse to their foes, the Trojans. The horse is dragged inside their city walls, but that night, Greek soldiers sneak out of the horse's hollow belly and capture Troy. The phrase is also used to describe a malicious computer virus hidden in a seemingly normal file.

Type of Imaginary Object:
Mythological, Idiom, & Fictional (Literature).

Web Reference

Other builder information:
I am 24 years old and love to build and meet new people

Figure 45, screenshot of an “imaginary object” from *No Matter* web site, Scott Kildall and Victoria Scott, 2008 mixed reality art work, including net.art site, and both *Second Life* and *Real Life* exhibitions of objects

Given the seemingly arbitrary monetary values attributed to these imaginary objects online, to the amount of work-time contributed by their participant builders, and to what that work translates into when it is itself translated from the imagined to the real world, Kildall and Scott’s work could easily be read through the lens of the sociopolitical. The artists in fact promote such a reading. They point out that the imaginary objects in *No Matter*, like “physical currency... act as symbolic containers with little inherent worth embedded in the material itself” (Kildall and Scott, *No Matter*). The value of these ‘objects’ is a conceptual constitution imputed onto them.

Alongside their reading, the implicit body approach and Virtual-Performance thematic accent how these are potentialized “objects” that emerge from both the real and

the virtual, through an active and relational engagement with each. The SL builders perform their virtual objects from in front of their computer screens, which are then purchased by Kildall and Scott, and per-formed again through software, printing and physical gluing of forms. Bodies and avatars, real and virtual flesh and material and data, are all wrapped up in a series of networked and imaginary 'things.' The artists open up not only questions of value, but of what *is* physical, real, virtual, information. They ask, "What is possible in all that potential?"

Kildall and I have also produced a collaborative Virtual-Performance, where we use the online, editable information site, *Wikipedia*, to feed back into itself in a similar way. Our individual modes of artistic inquiry have been discussed at length (Kildall in this section, and mine throughout Chapter 7); together, we aim to intervene in the continuous relationships between 'virtual' epistemology and/with 'actual' phenomenology. Here constructed knowledge (in the form of online information) is always understood as constituted materially, and vice-versa; each is a co-emergence, a relational activity *and* experience.

Wikipedia Art, our first public collaboration, is a conceptual art work composed on *Wikipedia*, and is thus art that anyone can edit. It manifests as a standard page on *Wikipedia* - entitled *Wikipedia Art* - and like all *Wikipedia* entries, anyone can alter this page as long as their alterations meet *Wikipedia's* standards of quality and verifiability: the edits must be well-written, and cited / referenced from elsewhere. As a consequence of such collaborative and consensus-driven edits to the page, *Wikipedia Art*, itself, is transformed. Here a performative loop of the necessary external blog articles, interviews and press, and internal, *Wikipedia*-based, textual edits and citations, ontologically creates and transfigures a conceptual art object, over time. We playfully call this ongoing social inter-activity "performative citations" (Sherwin, Stern and Kildall).

On 14 February 2009, Kildall and I published a two-way interview about *Wikipedia Art* on the popular emerging artist web site, *MyArtSpace.com*. Five seconds later, we birthed an entry by the same name on *Wikipedia*, citing that very interview as a 'credible' and 'verifiable' source of knowledge / information. The aforementioned interview avows that our work "intervenes in *Wikipedia* as a venue in the contemporary construction of knowledge and information, and simultaneously intervenes in our understandings of art and the art object" (Sherwin, Stern and Kildall). Kildall and I request writers and editors to join in the "collaboration and construction, the transformation, the destruction and the resurrection" of the work; we want our "intervention to be intervened in" (Sherwin, Stern

and Kildall). Like "knowledge and like art, *Wikipedia Art* is always already variable" (Sherwin, Stern and Kildall).



Figure 46, *Wikipedia Art* logo
Kildall and Stern (2009)

As suspected, the *Wikipedia Art* entry on *Wikipedia* did not survive; it lasted only 15 hours (and the Wikimedia Foundation, owners of the *Wikipedia* trademark, are in fact currently trying to shut down the archive of the project at WikipediaArt.org). But during and after that time, there has been extensive writing about the work, making it a continuous performance after all. According to Shane Mecklenburger, a Chicago-based artist who wrote the following text on the now forever-lost *Wikipedia Art* entry:

The *Wikipedia Art* page is a self-aware exploration of *Wikipedia*'s mission of collective epistemology. It enacts and describes *Wikipedia*'s strengths, weaknesses, potential, and limits as both a system of understanding and as a contemplative object of beauty. It demonstrates how a *Wikipedia* page can transcend the medium of *Wikipedia* while retaining its basic utilitarian *Wikipedia* function. The page is similarly a self-aware example of the strengths, weaknesses, potential, and limits of new media art.²⁴⁸

At their limits or boundaries, I would go on to say, *Wikipedia* and *Wikipedia Art* are thus 'more' than what they 'are'; they are, in Massumi's sense, topological figures.²⁴⁹

Interestingly and as alluded to by Mecklenburger, it was in the new media art blogosphere, and not on *Wikipedia*, where most of the piece's ontological and epistemological transformation takes place. While the multi-paged 'deletion debates' on *Wikipedia*, between 14-16 February, discussed the merits and flaws of the project as an encyclopaedic entry,²⁵⁰ the art world moreover discusses what the project is, how it forms,

²⁴⁸ Although the original source for this text is no longer available on *Wikipedia*, this brief section is archived – uncredited – at <http://www.twocoatsofpaint.com/2009/02/hello-wikipedia-its-blogosphere-calling.html>

²⁴⁹ See Section 3.2 for more on topological figures.

²⁵⁰ See, for example,

http://en.wikipedia.org/w/index.php?title=Wikipedia:Articles_for_deletion/Wikipedia_Art&oldid=270889994 and

[http://en.wikipedia.org/w/index.php?title=Wikipedia:Village_pump_\(miscellaneous\)&oldid=271199202#Help._I_have_created_a_monster.21](http://en.wikipedia.org/w/index.php?title=Wikipedia:Village_pump_(miscellaneous)&oldid=271199202#Help._I_have_created_a_monster.21) and

http://en.wikipedia.org/wiki/Wikipedia:Deletion_review/Log/2009_February_15

what that means, and who says so. According to digital artist and theorist Curt Cloninger (in a thread on the online digital art community, *Rhizome.org*), such debates were (and continue to be) “policing’ the ‘art-worthiness’ of the piece... the same way the wikipedians were policing its ‘encyclopedia-worthiness’” (Rhizome Discussion Thread). And through these very discussions, Cloninger goes on to implicitly argue, the piece changes. He avers, for example, that whether or not *Wikipedia Art* “intended to raise these issues regarding the inherent subjectivity of canonicity and authority, it has effectively raised them” (Rhizome Discussion Thread). The “unexpected propagations” of the various participants in *Wikipedia Art*’s ongoing ‘life’ and discussion, he contends, “may at least prove” that the project is “conceptually porous enough” to “absorb” them. In other words, the piece was/is performatively transformed through what people say about it, whether it is their (either the artists’ or participants’) intention, and whether it remains on *Wikipedia*, or not.

Wikipedia Art could potentially be read through the Social-Anatomies thematic. Paul Wehage’s description of the piece on *Akahele.org*, for instance, says that Kildall and I are “reflecting the bureaucratic structure and highly ritualized practices” of *Wikipedia* “back to the very society that has created them” (In the Eye). Here interrelated social practices per-form systems which per-form practices (ad infinitum). The piece could also benefit from a Body-Language reading, where incorporation becomes inscription becomes incorporation.²⁵¹ On Furtherfield.org, for example, artist and scholar Professor Patrick Lichty says that the “work is open to repetitive writing and re-writing to the point where it is possible that the only remnant is the gesture” and practice of writing “itself. I’m sure that Kildall & Stern... will be documented as the progenitor[s] of the form, but the destination of the vector is by no means assured” (WikiPedia Art?). These two potential readings – Social-Anatomies and Body-Language – can also both feed into a Virtual-Performance critique of the work, but in this, the piece is given form and materiality only through its ongoing, and networked-based, transformation.

Lichty, for example, goes on to say that *Wikipedia Art*’s “indeterminacy makes it largely conceptual, and slippery at best, making it a strong relative of networked conceptualism or highly formal online media art” (WikiPedia Art?). And in a second Rhizome thread, Cloninger furthers this argument in claiming that the piece utilizes/is

²⁵¹ See Section 3.4 for more on inscription and incorporation.

a form of resistant/tactical media, but one not afraid to co-opt and implement corporate consumer strategies. It is simultaneously subversive and overt. It is fluid enough to have discrete manifestations in offline galleries, to take on non-'new media' forms, to assume the form of critical essays, books, and talks. It is basically a project of ongoing, widely-dispersed, inflected language. (Rhizome Discussion Thread)

Here the piece must be understood as not just "language," but a "widely-dispersed" and ongoing socially networked form[-ation]. 'Immaterial information' – an impossibility a la Katherine Hayles – performs and transforms itself, becomes material, through its relation to people and ideas online.

Artist Pall Thayer gives a temporal context for *Wikipedia Art* that also serves an incorporated understanding of how it functions. Thayer argues that "Art is always strictly tied to the time and culture from whence it came"; it is contextual (Rhizome Discussion Thread). "Perhaps, for that very reason," he goes on to say, "it was best that *Wikipedia Art* was deleted" (Rhizome Discussion Thread). Rather than continuously being changed, and perhaps diluted, in its ongoing-ness, *Wikipedia Art* "gets to live on as a reference point to the time and culture that created it" (Rhizome Discussion Thread). In other words, *Wikipedia Art* lives on because of its death; it is permanently inscribed in collective memory, I follow Thayer in arguing, precisely because its incorporation, as with all incorporating practices, was contextually performed. It was made, and re-made, and continues to live through its death, as a potentialized, re-iterated, re-written and re-made work of art. Like Jean-Luc Nancy says of the body in writing, "the ghost of *Wikipedia Art* is bound to haunt the web for some time yet."²⁵²

MTAA, Kildall, Scott and I all use the network to intervene in, birth, or transform relations, ideas and materiality both online and in the physical world. The art works discussed here have been shown to re-present and make sense of Internet-based relationships, giving virtuality to the body, and bodies virtuality. The short, implicit body readings of *1 Year performance video*, *No Matter* and *Wikipedia Art* accent and extend how we might engage with embodiment, virtuality and interactivity more generally. They reveal how these art works play with the network's inherent tensions between the performed and pre-formed; and they help us to both question and understand

²⁵² Cited from a comment by user 'helen' on "WikiPedia Art?" (Lichy).

telecommunications media and the bodies that link them, bodies and the telecommunications media that link them.

²² This term is common to user-point-to-point networks and is used to refer to a network.

9 Conclusion

As laid out in Chapter 1, the introduction, this dissertation argues that an exploration and examination of interactive art and embodiment, together, leads to better understandings of the two. It reasons that, essentially, embodiment *is* interactivity, is 'of the relation,' and puts forward a theoretical approach, and critical framework, for reading these together when critiquing contemporary art. This dissertation's overall contributions, therefore, are most evident not only in the proposed framework, but also in its intensive and extensive case studies, where said framework is deployed to show how interactive art is amplifying bodiliness, how the body and world's categories co-emerge from and of their relation, and how we might derive a stronger grasp of all of the above. Ultimately, this text shows how the implicit body approach itself emerged from an investigation of interactive art and embodiment, and how it can be reapplied to further that very investigation. Even while the implicit body is precisely that – implicit – an explicit approach to art, whether interactive or not, which is sensitive to the implications of the corporeal and incorporeal, opens new possibilities for comprehension and discourse surrounding interactivity, embodiment, potentiality and relationality.

Chapter 2 begins by arguing that discussions of digital art have been too rooted in paradigms of linguistic and visual apprehension, and shows how historical thinking around new media has often forgotten, or wilfully ignored, the body. Chapter 3 then uses contemporary phenomenology and performance studies theory to remember embodiment as processual and per-formed, as always already implicated in, and implied by, everything. Here I approach 'the body' not as a thing to be represented or captured, but rather as a co-original and relational process, continuous 'with' the world around it. The term 'interactive art' – defined on the first page of this dissertation's introduction as art works where a participant's interactions are integral to its existence – has been granted the same carefulness; it is, in Chapter 8, problematized in such a way as to respect the complexities of, and further the research around, embodiment and interactivity.

In Chapter 4, the 'implicit' approach to embodiment is turned into a critical framework for interactive art. With the implicit body framework, each piece is read not only through the artist's inquiry and art work description, but also through how viewers literally interact, alongside an examination of the embodied relationships in and of said interaction. Here a nuanced understanding of relational categories has been applied to an ongoing list of 'sensible concepts' – called 'thematics' when utilized within the implicit body framework – that co-emerge with body and world: space, language and society, to

name three. Sensible concepts are not only emerging, but emerging emergences, constituted 'with' each other, the body, materiality, the world. Any art work, I maintain, could benefit from multiple relational readings, where each iteration focuses on a different thematic. Such an approach remembers that the body is an active engagement and enactment, not blank matter on which society inscribes itself, and therefore calls for an investment in art that intervenes in, questions or challenges its formation, alongside that of space, meaning-making, society, etc. Intensively studying how we interact, relate and co-emerge with the world's categories has the potential to deepen our understandings of not only interactive art and embodiment, but also what is at stake in the openness of each.

The remainder of the dissertation utilizes the implicit body framework and several of its thematics to examine the work of a number of contemporary artists. These case studies and their in-depth analyses demonstrate various interventions in the body's performance / inter-activity, as well as how different thematic readings of said performance interventions serve to productively complexify and problematize how we apprehend the body and art. These case studies only begin to address a vast academic field for understanding the co-emergence of the body and world, and the importance of and in interactive art works that engage with and intervene in that emergence. This dissertation, however, puts forward a concrete framework for continuing that research.

In order to bring the essential elements of production and critique into the implicit body approach, and the art works it is intended for, I also present, in Chapter 7, an "Autoethnographic Experiment." This non-traditional case study frames my own practice and praxis in a style intended to capture the affective performance of art-making in the studio, and many of its implications. In addition to playing out the involved research, thinking and making behind this dissertation, the form of this autoethnography makes contributions through its unfolding and infolding of research, writing and arts practice, and its alternative mode of re-presenting each. Here I meet the PhD requirement of intellectual rigour, but at the same time attempt to embody and encapsulate (and implicate) the artistic process.

Finally, with Chapter 8, this dissertation provides potential applications for the implicit body approach to contemporary works of art that would not be considered interactive by its own definition. The theorization of a 'potentialized art,' works that are iteratively per-formed by the artist or through technically mediated means, offers new

conceptual and material possibilities for understanding interactivity and embodiment – through interactions, interventions and implications – in more traditional art forms.

The future of this research, of the implicit body approach and framework, lies across three potential applications of this text. First and foremost, as is its intention, the framework should be utilized in more case studies of art work. Each study would serve towards both a better understanding of interactive art and embodiment, as well as refining the framework itself. I foresee possibilities, for example, in art exhibitions and catalogues, themed conference panels and journals, that aim to incorporate and unpack an implicit body approach into their works and texts. Some well-known interactive artists worthy of examining but not mentioned in this dissertation include Daniel Rozin, Liz Phillips, Yael Kanarek and Ken Rinaldo to name four. In the field of potentialized art, the works of Olafur Eliasson, Anne Hamilton, Bill Viola and Janet Cardiff could provide exemplary studies. And perhaps most importantly, there are a vast number of lesser-known and emerging artists, theorists, writers and curators working across new genres as a part of cutting edge online and worldwide communities such as *Rhizome*, *Turbulence* and *Furtherfield*. Such communities have much to offer to, and to gain from, an ongoing implicit body discourse.

Secondly, although perhaps not completely separate, I foresee a growing number of sensible concepts – applied as implicit body thematics – from within the framework at large. While this dissertation has put forward Flesh-Space, Body-Language, Social-Anatomies, Vestigial-Vision, Tangible-Temporality and Virtual-Performance, I doubt this list will ever be exhausted. For example, Vestigial-Vision addresses only one mode of perception as co-emergent with the process of embodiment. In addition to listing the other four exteroceptive modes (touch, taste, smell, sound), there are possibilities for reading an emergent and affective proprioception, as well as interoception. Here the process of embodiment, and its perceptual and co-constitutional activities ‘with’ its own insides and outsides, could make for a fascinating study. Or, rather than being limited to broad notions of an emergent ‘technology’ with the body (Ihde, Hayles, Hansen) or ‘evolution’ with the body (Hansen), one could be more precise: biology, chemistry, analogue electronics or digital media, for instance, could each be examined as co-original sensible concepts. As is the case with all previous thematics, the specificity of the inter-action and relation is key. These could again be explored through open calls in journals, exhibitions, panels and research studies.

And third, already exemplified by Chapter 7, is the possibility – and need – for all of the above to feed into artistic inquiry and practice. As an example, I conclude this

dissertation in a very non-traditional way – with a proposal for a new work of art. My piece, tentatively called *Given Time*, sits across most of the sensible concepts / thematics discussed in this dissertation (and more); it speaks back to the discourses surrounding interactive art, embodiment and relationality; and, it is a performed and potentialized art work that lives both on the network and in physical space.

Given Time simultaneously activates and performs two permanently logged-in Second Life avatars, each forever and only seen by and through the other. They hover in mid-air, almost completely still, gazing into one another's interface. Viewers encounter this networked partnership as a diptych of large-scale and facing video projections in a real world gallery, both exhibiting a live view of one avatar, as perceived by the other. To create a visceral aesthetic, these custom-designed and life-sized 'bodies' are hand-drawn in subtly animated charcoal. The audience is invited to physically walk between them; they're able to hear and see them breathing, witness their hair blowing in the wind, pick up faint sounds such as rushing water or birds crying out from the surrounding simulated environment. Here, an intimate exchange between dual, virtual bodies is transformed into a public meditation on human relationships, bodily mortality, and time's inevitable flow.

Second Life (SL) is a 3D social network accessed exclusively by logging in as a representational character. Real life 'residents' experience SL through a computer game-like first-person interface, and are seen by others as human-like forms. Every avatar in SL's virtual buildings and streets has a corresponding person somewhere in the physical world. There is no entry to SL without a user, computer, and avatar; we perceive, act, activate and are activated through our virtual interactions with its residents. In *Given Time*, however, there *are* no users, and the SL 'in-world' location is not made available. These avatars are realized only through each other and their publicly shared installation and engagement, incarnated through a feedback loop across virtual *and* actual space.

Although *Given Time* invests in and points to relationships, embodiment and time, it renders them all, literally, im-material. While SL suggests people behind every avatar, these performers are precisely no one and

no-body; the time and space in which they unfold do not actually exist, except as part of a networked computer software held loosely together by intangible encounters. While the computers and projections sit side by side in the real world, and the avatars face one another in SL's imagined world, they are only 'there' as electrical pulses sent through, potentially, thousands of miles of telecommunications wires that circle the globe. It is a meeting between ever-present entities that are also not-there until we give them our eyes and our flesh. We, the viewers, act as their real-world and material avatars, giving life to the space between them.

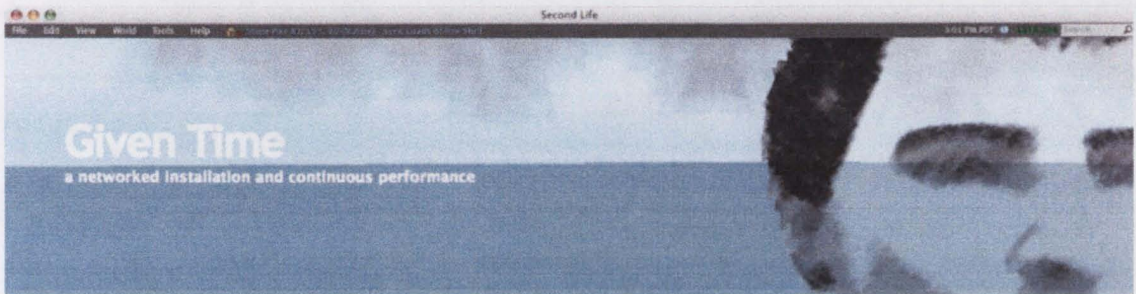


Figure 47, *Given Time* (online proposal banner image, 2009)

Given Time's minimal aesthetic and avatar-driven partnership is not dissimilar to Felix Gonzales-Torres' slowly dying battery operated clocks in *Untitled (Perfect Lovers)*.²⁵³ But this piece does not ask us to reflect on private grief or public yearning, on loss, death or desire. Instead, it asks, "When we have already given everything - our desires, bodies, and time - what, then, is left to give?" It is a tension, hovering in the air, tracing the invisible and untouchable connection that is no-thing and every-thing. All it can give is the reciprocity between its actors. (Stern, *Given Time*)

²⁵³ When first conceptualized, *Given Time* was called *Perfect Hovers*, a reference to this initial inspiration. In *Untitled (Perfect Lovers)*, 1987-1990, Gonzalez-Torres installed two identical, adjacent, battery-operated clocks that were initially set to the same time. With each passing day, they inevitably fall more and more out of sync, and the batteries eventually fail. He created this work shortly after his partner, Ross Laycock, was diagnosed with AIDS. Here the artist transformed two everyday devices into an intensely personal yet public monument to fragility and love. My piece's newer title focuses instead on *Given Time*'s Derridean influence (a reference to Jacques Derrida's book of the same name, 1992) with regards to reciprocity and gifting. It is a dedication to my own life partner, Nicole Ridgway.

A vital part of *Given Time* is that the avatars will each have identical, dedicated computers, logged in as permanently as possible. They will be forced to log out when SL is down or when the installation is moved, and I, the gallerist, curator or someone at the exhibition space will need to log them each back in. Here the element of time, the limits of technology, and the much needed performance of those who are invested in and will take care of the avatars and their *Given Time* (both in Real Life and Second Life), are very much a part of the ongoing performance and installation. Bodies and network, space and time, society and structure, person and people, co-emerge through their ongoing interaction and relation, through the reciprocity of their (inter-)actors.

Every-thing is implied.

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