

Towards a Connective and Ecosophical New Media Art Practice

Keith Armstrong

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I believe that what we will see in the next few years is a new paradigm based upon the notion of participation, in which art will begin to redefine itself in terms of social relatedness and ecological healing ... artists will gravitate towards different activities and roles [compared to] those that operated under the aesthetics of modernism.

Suzi Gablik, *The Re-enchantment of Art*, 1991¹

The design of *Intimate Transactions* was inspired by a range of discourses and practices drawn from the fields of critical ecologies, new media and innovative performance practices. At its core is what I refer to as an *ecosophical praxis*. Underpinned by an engagement with aspects of critical ecology, such a praxis sits within a social and political agenda that emphasises the integral place of social relationships within ecological systems. Because of its emphasis on relationships, an ecosophical praxis involves a socially driven approach to art practice. Collaboration and interactivity guide both the production of art and the design of how it will be experienced. Within the development of *Intimate Transactions*, I have therefore taken on the role of interdisciplinary collaborator and I have resituated audiences as performers who engage with ecological issues through their interactions with both the artwork and other participants. While this approach of combining ecological concerns with collaboration in production and experience is subtle and non-didactic, it ultimately governs every aspect of the work.

In this essay, I will elaborate upon the ecosophical principles that have influenced the design of *Intimate Transactions*. I will also reflect upon the iterative design process and the progress of *Intimate Transactions* towards its current iteration as a participatory, embodied,

networked and collaborative new media artwork. By charting the gradual refinement of its design, I will show how this project has come to fulfil Gablik's prediction of art that facilitates an understanding of complex ecological concerns and social participation.

An Ecosophical Foundation

My approach to the design and production of new media art has developed through a long-term study of the principles of ecosophical philosophy.² While ecology and ecosophy share a common derivation in the Greek terms 'oikos' and 'sophia' (which together translate as 'wisdom of the house or dwelling'),³ it is important to distinguish their meaning. Ecology is a scientific field; its key concern is with the integrity, homeostasis and diversity of natural systems. Ecosophy, on the other hand, is a philosophical approach. It developed out of critical ecology (which emerged from critical theory typified by the Frankfurt School)⁴ and debates surrounding the ethical issues raised by scientific ecology as it struggled to deal with the implications of humanity's adverse impact upon global ecosystems.⁵ As a field of dynamic cultural debate, critical ecology is concerned with issues such as environmental degradation and sustainability.⁶ Focusing upon the root causes of these human-created conditions,

it is concerned with the broader study of dynamic relationships. In particular, it is concerned with human behavior — the way that we act towards each other and the natural systems of which we are a part.

One of the key arguments of critical ecologist such as Tony Fry, Carolyn Merchant, Arne Naess, George Sessions and Elizabeth Baker is that we have developed (in the West at least) a deeply ingrained belief in humanity's hegemony over the non-human world.⁷ Fry goes further, suggesting that this belief has led to our perceptual separation from the environment. He argues that we have developed, "[an] absolute blindness to the fact of our connectedness to both material and immaterial ecologies".⁸ Yet, as Fry goes on to conclude, "No matter what we have come to believe ... 'we' are not individuated entities but relational beings."⁹ That is, while a perceptual separation has become deeply ingrained within our psyches, it contradicts one of the basic facts of our existence: we are, necessarily, an integral part of life's interlocking cultural and biophysical ecologies.¹⁰

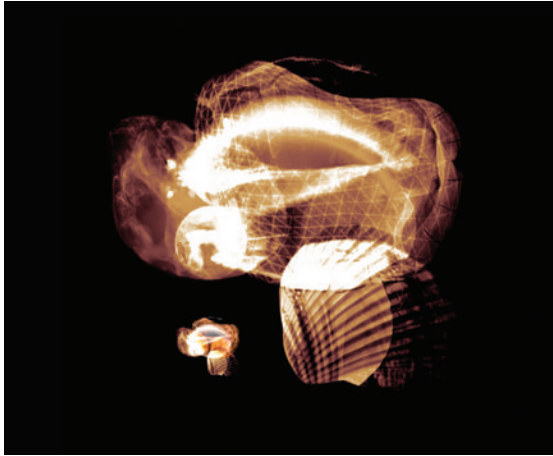
Theorists such as Fry, as well as Felix Guattari and Verena Conley, have gone on to argue that this homocentricity is reflected in our complex social ecologies and the ecologies of the inorganic



environments that we produce. These, in turn, have an enormous impact upon the natural environment.¹¹ We might conclude from this that the current ecological crisis stems from the way in which we conceive of ourselves in relation to the non-human world.¹² As Fry argues, the possibility of ecological sustainability requires us to move towards an understanding that our relationships with the non-human world, and with each other, are necessarily symbiotic.¹³

Ecosophy provides a set of guiding principles that we might follow. Noting that the definition of ecosophy must remain open and fluid because it is contextual and personal, Norwegian philosopher Arne Naess

(the founder who coined the term 'ecosophy' in 1995) describes his own, personal ecosophy (which he calls *Ecosophy-T*).¹⁴ This includes: respecting the intrinsic right of others to be and become, fighting against pollution and resource depletion, working towards population reduction, respecting complexity and depth, promoting autonomy and decentralization, negotiating voices for the voiceless, developing measures of life quality not tied to material goods, and acting individually and collectively to begin making change around these principles. Naess argues for, "a rejection of the person IN an environment in favour of 'a relational total field image'".¹⁵ It is important to note that this 'relational total field image' includes not only an ethical engagement with



far left: *Force of Permanence, Landscape of Imagery*
image: Benedict Foley

left: *Force of Conflict, Landscape of Imagery*
image: Benedict Foley

the environment, but also an attendant consideration of our relationships with each other. An ecosophical position therefore re-images our relational engagements within both the ecological and social systems of which we are a part.

There is a place for art and design within such an ecosophical framework. Suggesting that art and design might provide a panacea for the current ecological and social crisis on their own would clearly be absurd. However, as Guattari has argued, aesthetic activities (such as music, visual art and cinema) should be deployed as tools because of their undeniable power to affect change within the realm of subjectivity.¹⁶ Fry similarly seeks to assure cultural practitioners of the importance of our role. He reminds us that design has real power within society because its task is to convert ideas, concepts or intentions into realisable forms. Design impacts upon, and configures, almost all of our living environments and so defines many of our interactions with the world. He argues that while design has been deeply rooted within histories of anthropocentrism, and therefore has tended to establish and maintain social functionality and 'restraint',¹⁷ changing the way that we approach design can have an enormous impact upon the way that we interact with the world. It can therefore potentially

change the way that we approach, and therefore understand, ecology.¹⁸

The Emergence of an Ecosophical Praxis

Ten years ago I began to consider what role I might play in engaging with the problems of ecology through the production of new media art. Ecological art movements of the 1980s and 1990s had emerged in response to a greater understanding of the unfolding environmental crisis and our ethical responsibility. We might think, for example, of Dominique Mazeud's *The Great Cleaning of the Rio Grande* (1987-2002), Andy Goldsworthy's numerous photo essays (1980 - 2002), or Joan Brassill's *Where Yesterday May Be Tomorrow* (1997). However, while such artists were identifying human responsibility for our ecological woes, few were dealing with why the crisis had come about and how it was being perpetuated.¹⁹ New media art, in particular, largely tended to operate without acknowledging the homo-ecological implications of its practices.²⁰ I wanted to explore processes for conceptualising and developing new media art works that would operate within an ecosophical framework.

I resolved to apply the principles of eco-political and eco-social engagement through a process of 'practice-led' research.²¹ I decided that the new media works I



produced would be inspired by, and focus upon, the possibility of a paradigm shift in our understanding of our place and role within dynamic, interlocking ecological and social systems. Rather than creating directive, didactic forms, these artworks would provide contextual frameworks within which audiences might be encouraged to reflect upon the 'problem of ecology' and the problems of human subjectivity that have been identified by Fry, Guattari and others.

Emerging from the concept of a 'relational total field image', collaboration and collective action are key facets of an ecosophical praxis. I therefore adopted a number of approaches to providing audiences with the opportunity for shared experience, social interaction and discussion around pressing ecological issues. I re-interpreted the traditional role of audiences and harnessed the interactive, connective aspects of networked new media art practice, as well as conversational communication strategies, in order to foster social engagement through the work. I wanted to encourage participants to reflect upon the implications of both individual action and group collaboration within computational, aesthetic systems. In motivating and empowering audiences to play a key role in creating and shaping their environments within the artwork, it was my hope that they would reflect upon the experience and be inspired to act in new ways within their own social contexts.

In line with ecosophical principles, and because solutions to the 'problem of ecology' inevitably must incorporate strategies from multiple perspectives, I decided to draw together a collaborative, interdisciplinary team of creative practitioners. According to Fry, an interdisciplinary group that is bound and activated by a related set of ecosophical beliefs provides support mechanisms through which complex ideas, practices and attitudes can find support and so be nurtured, enacted and extended. It therefore potentially constitutes what Fry refers to as a structural 'community of change',²² or what David Bohm refers to as a 'microculture of change'.²³

The Transmute Collective, with myself as artistic director, Lisa O'Neill as performance director, and Guy Webster as sound director, was formed in 1998 around a sympathy with these ideas and a desire to make interdisciplinary, performative installation work. Over time we have extended this core creative team to include programmers, electronic engineers and ecological scientists.

Stage One: Two Pilot Projects

In 2001, after producing a number of major works, the Transmute Collective began to develop *Intimate Transactions*. Two initial pilot projects which set the

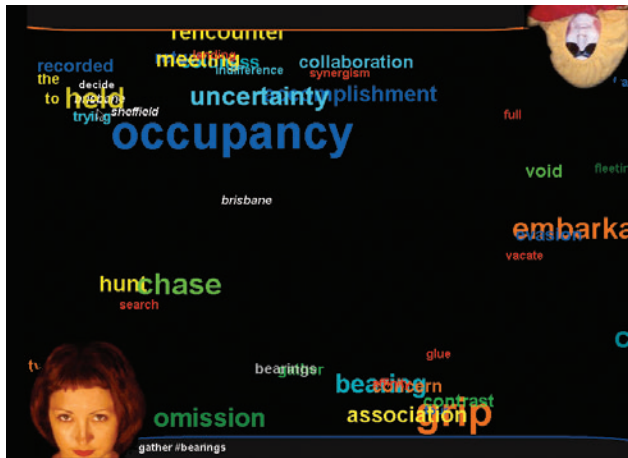
groundwork: *Liquid Gold* (2001) and *Transact (Flesh/Skin/Bone)* (2002). We decided that the core of their interactive, computational design would be inspired by the energetic flows within scientifically described ecologies (for example the flows of energy that originate from the sun/photosynthesis and are subsequently exchanged via consumption and decomposition). The intention was not to mimic the sophisticated (and mostly mysterious) operations of biophysical or social ecologies. Rather, it was to produce simple energetic transmission and reception path metaphors, and so to refer to the connection-making and communicative features of these life-sustaining systems.

These ideas of energy transfer have a synergy with the practice of the Transmute Collective's performance director Lisa O'Neill, who performs in the Japanese tradition of Suzuki Theatre. Suzuki Theatre is an actor-training method that focuses upon the energetic centre of each actor and explores the subsequent energy-based relationships between the actor and other actors, as well as with their audience.²⁴ This model of relational exchange, transfer and resonance not only influenced the development of the energetic flow metaphors of the work's computational interaction design, it also led us to conceive of *Intimate Transactions* as a durational, performative experience.

The first pilot project, *Liquid Gold*, consisted of simultaneous performances in Brisbane, Australia, and Sheffield, England, which were accurately coordinated across time zones.²⁵ To connect these venues, and an online audience, the work employed a custom-built chat server (called the 'idea animator') that ran in both physical venues and on the remote audience's Internet browsers. The performance was led by Lisa O'Neill in Brisbane and remixed by me as it was presented live in Sheffield. This stream was then returned and reworked in Australia in a continual interplay between sites.

The work's content was based upon a woman's journey: physically through the revamped industrial interior of the Brisbane venue (a converted industrial-era powerhouse) and on-screen through a number of fantastic, brightly coloured virtual worlds. It was a journey that allowed her to reconcile the ghosts of her chequered past and journey towards her newly imagined future.²⁶ Two writers (one in Australia and one in England) translated what they were witnessing locally in their performance venues into text. Their words were animated and projected live in both venues and on the remote audience's browsers. Players were able to click on particular words, causing the online avatars to gravitate towards them, thus allowing a constantly circulating flow of ideas and emotions.





Idea Animator (screenshot)
Liquid Gold Online, 2001
 graphics: Gavin Sade/Deni Stoner

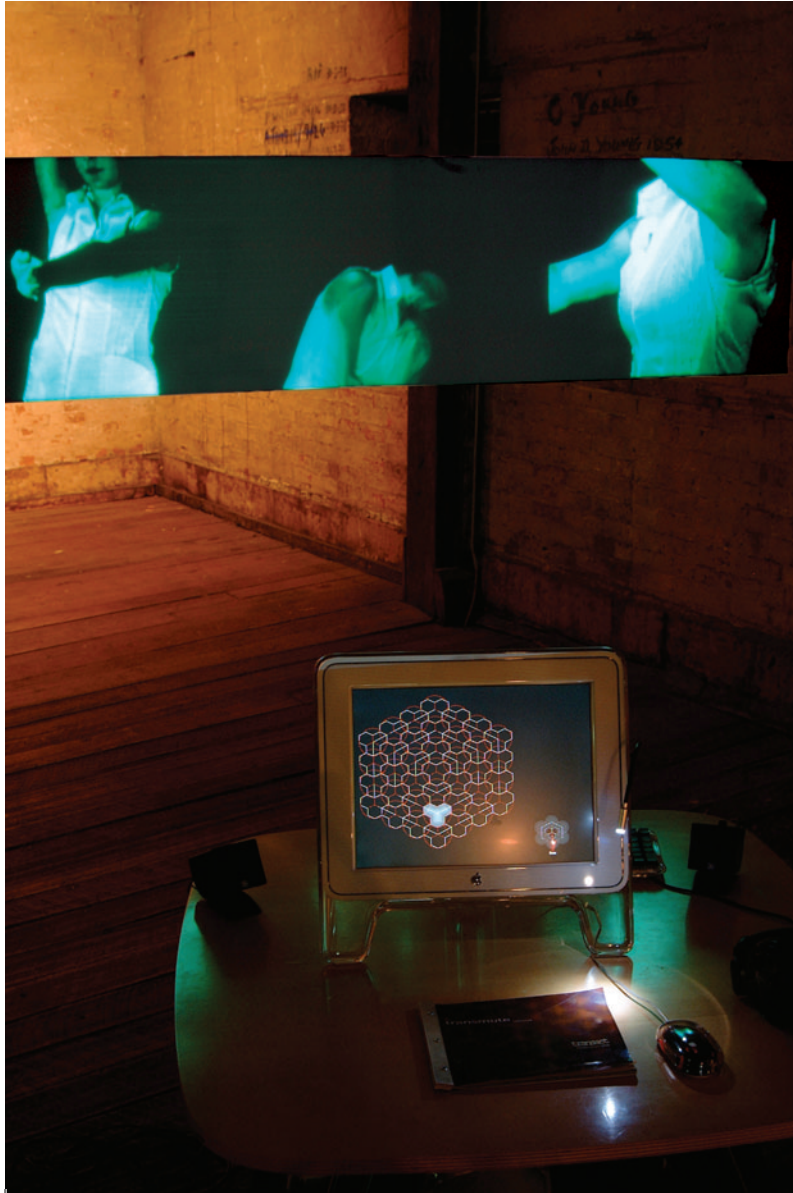
also informed by the Suzuki actor training method's understanding of dynamic balances between 'skin' (a performer's outward appearances), 'flesh' (the result of a breadth of disciplined training) and 'bone' (a performer's inherited bodily characteristics).

Again the work incorporated the performance of Lisa O'Neill. It was configured as a two-screen installation with spatialised sound — an evocative, nonlinear sound work created by Guy Webster that was characterised by a deepening sense of uncertainty. This artwork involved an interactive scripting methodology (designed by Gavin Sade) and was inspired by the tessellated, interlocking honeycomb structures that are prevalent within many ecological forms. This structure allowed the work's dynamic, performative imagery to be arranged into cells, which were recombined and juxtaposed in real time. The user could indirectly control the work through a deceptively simple interface that allowed them to set the parameters for bodily flesh, skin and bone characteristics.

These two works were early experiments with ecologically inspired content and structures as well as performativity within networked, dual-site installations. In both works, participating audiences who brought a willingness to collaborate became increasingly

The connective, distributed structure of *Liquid Gold* demonstrated the potential for networked performance installations that both stream images and connect online audiences through playful, hybrid experiences.

The second pilot, *Transact (Flesh/Skin/Bone)*, was shown at the Tasmanian State Art Gallery in Hobart, Australia in 2002.²⁷ It alluded to the relationship between the body's internal 'weather' environment and the ever-changing atmospheric conditions that it depends upon. It was influenced by the practices of the Japanese performance form 'Body Weather', which refers to the dynamic interactions between the 'atmospheric conditions' of a performer and their site.²⁸ It was



embedded within the work's content, form and modality and slowly began to understand their role and place within the work's fluid relationships.

Stage Two: Eco-conceptual Development

As we observed participants' interaction with *Liquid Gold* and *Transact (Flesh/Skin/Bone)*, we increasingly came to realise the potential of performance within interaction design and the power of choreography in the design of interactive systems, interfaces and virtual characterisation. We decided to further emphasise the role of performativity by moving the participants towards a more active role. From this point on, our work would require participants' active engagement through whole-body movements. The effects triggered by a sustained, physical interaction would ripple through to all other computational and experiential aspects of the work.

Because of this emerging emphasis on physical movement to trigger interaction, the project's input devices and their supporting physical structures became an important aspect of development. It became apparent

Stills from the installation
Transact (Flesh/Skin/Bone), Tasmania
State Gallery, Hobart, Australia, 2002
photograph: Keith Armstrong

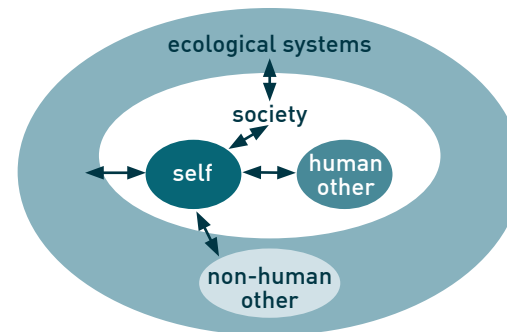


that they should have a strong physical presence, but not detract from the experience of participants once they were engaged with the work. This led us to design what we called a Bodyshef, in collaboration with furniture designer and visual artist Zeljko Markov. Underpinned by a networked, computational system, this unique hybrid of furniture and interaction device demands a particularly active physical engagement. It requires participants to make full body contact with its footrests and backboard, and to be in continual motion.²⁹

Our intention was to produce an *embodied* experience of interaction. Like Paul Dourish's definition of embodiment, which incorporates 'a participative status' that includes conversations and actions as they unfold in the world,³⁰ the term 'embodied' is used here to both describe the foregrounding of the participants' bodies in their interaction with the work and the engaged, inter-relational sensibility that we were striving for. We wanted participants to become immersed within *Intimate Transactions'* systemic operations physically and, at the same time, be engaged with multiple processes of dialogue, exchange and transfer. In this, we set out to conform to Naess's ecosophical principle of moving beyond a simple understanding of 'a person IN an, environment' towards a 'relational total field image'; that is, a complex, participative engagement.

At the same time, we decided to increase the ecological, relational experience of the work. We developed a new conceptual approach to the logic of the interaction around what project mentor and sustainability scientist Liz Baker terms 'ecological subjectivity'.³¹ With Liz, we conceived of three interlocking concepts: *Me*, *Us* and *Other*. She described them as follows:

Me is ... that bit the participant identifies as themselves ... Us is (for most people) other people like me ... a more inclusive term ... Other ... is that stuff which is not like me ... that I have no connection to.



Ecological Self Relationships, 2001
diagram: Liz Baker

We adopted this trio of concepts as a core organisational principle for the work. Through adaptations within the scripting methodology, interaction design and media, we transformed the work to involve an experience or journey through three distinct movements: between states designated as Me, Us, and Other.

The conceptual logic of this trio of Me, Us, Other states was incorporated into the range of media to be activated in response to the participants' bodily movements. Each collaborating artist was asked to interpret each of the Me, Us, Other states within their own medium: performance, sound, visual image, vibration or interface design. We wanted to reward participants through this sensory feedback when they brought a willingness to collaborate, based upon their emergent understanding of their own place and role within a series of complex, shifting relationships.

Zeljko Markov designed the Bodysshelf to facilitate a choreography of gentle body movements through the three states. In its first iteration, it allowed a range of body movements for continual transitions between containment and openness. The Me state required both hands and feet to be pressed backwards into the device. A transition towards the Us state required increasing physical extension of upper body and arms. This led to a fully extended pose — the Other state — that required the

participant to reach into the darkness and towards the large screen-space slanted in front of them. In this way, the participant's movements transitioned from a private, contained stance towards a state of extended reach. An overhead, camera-controlled, gesture recognition system allowed the quality of arm movements through Us and Other physical states to be registered and relayed to the system, which then triggered feedback to the user through various media that was mixed and effected in real time.

The interactive sound-scape created by Guy Webster progressed through sounds that could be perceived as personal and close (Me state); through spatially familiar (Us state); towards distant, unfamiliar, and spatially abstract (Other state). A speaker was built into the Bodysshelf which produced sonic vibration on the participant's back.

The visual media included representations of ghostly bodies and multiple shards of floating texts that were drawn from Italo Calvino's short story 'Smog', which tracks a man's obsessive preoccupation with a physical and psychological pollution that is enveloping his increasingly fraught relationships.³² The body forms and texts were organised into databases and were tagged with characteristics that related to the Me, Us and





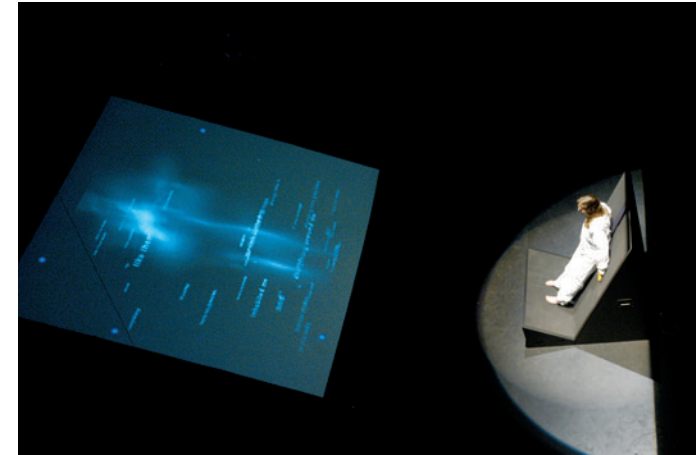
Tess de Quincey operating the first generation Bodyshef in 'Us' Mode
photograph: Keith Armstrong

Other concepts. This meant that words and phrases, which were animated in concept groupings, emerged out of a background mass of words and hovered in the foreground of a large, slanted screen. Multiple readings could be made from the same text as the words emerged and recombined through the progression of Me, Us and Other states. Combinations of bodily images also appeared, with their physical forms aligned to the various states: Me (tight, rhythmical, familiar); Us (smooth, flowing, open, welcoming); and Other (strange, juddering, improbable).

An array of media thus combined to provide sensory feedback that reflected the participant's bodily expression. Bodily gesture so became a means for invoking and exploring mediated relationships that were at times comforting and personal, but could quickly shift to moments of great intensity and agitation.

In 2003 we exhibited this stage two, single-site version of *Intimate Transactions* to an invited peer group at the Brisbane Powerhouse Centre for the Live Arts in

Participant navigates the fluid text environments of *Intimate Transactions*, Stage 2, 2003 photographs: Sonja De Sterke



order to capture feedback. Participants acknowledged a strong, integrated relationship between their interaction and the sensual feedback of sound, vision and vibrations. Our incorporation of the ecosophical principle of re-situating the 'Self' in relation to the ecological 'Other' was also clearly understood by some participants. For example, Liz Baker wrote that,

The installation, I came to realise, is a way of exploring otherness, strangeness, and unknowability in a safe way: a physical/aural/visual analogy to storytelling. Because it is safe, the individual is more likely to explore just that little bit further, to take themselves into unfamiliar territory ... its objectives

are met through the experience of exploration. It helps us learn to push the boundaries of the familiar in ways that accept unknowability. In that, it is a small lesson in developing an ecological consciousness.³³

However, from the feedback we received, we also became aware of a design problem. Some participants reported feeling unable to easily locate themselves within the work. They had difficulty relating their body's actions to the changes in the work's imagery and soundscapes. This led to a perceived lack of agency. Feedback suggested that a direct, controllable representation of the participant through an on-screen avatar would make navigating through the visual interface much easier. Until



this point we had avoided making a literal representation of the participant. Instead, we had conceived of the participant as one key force affecting the environment and saw their representational presence as being constituted by the observable effects of their actions: changes in colour, speed, mixing, replication, processing and so on.

Despite our own satisfaction with the design, we had to acknowledge that our perceptions of the work might have been skewed by our knowledge of the work's intentions and by the many hours we had spent becoming intimately aware of its subtleties and effects. Our own experience was quite different to the experience of an audience member who was limited to 30 minutes or less interacting with the work.³⁴ Ultimately, we decided to make fundamental changes to our design. This involved reworking the entire interaction and visual design methodology.

Stage Three: *Intimate Transactions* as a Dual-Site, Networked Installation

In the subsequent, final iteration of *Intimate Transactions*, we retained the work's emphasis on performativity and embodiment, but decided to extend the participants' agency by introducing orientation

markers and modifying the interaction and interface design to become more intuitive. A representational avatar was developed to reflect the participant's navigational movements through the work and to make the relationship of the user to the worlds within *Intimate Transactions* appear more concrete.

The incorporation of an avatar suggested the possibility of a new structure in line with multi-player game engines, which typically use avatars to represent a participant's positions and activities. Within the model of multi-player game design, the avatar usually interacts with, and has dialogue with, other characters. This model therefore suggested the prospect of evolving the work into a multi-user application. This, in turn, provided the impetus to develop a dual-site, networked application — a version of *Intimate Transactions* comprised of two sites, each with a Bodyshelf, connected by a server within a distributed network.

Such a major extension of the project required significant design changes. These were begun in the first year of my two-year Postdoctoral Fellowship at Queensland University of Technology (QUT) Creative Industries Research and Applications Centre, and were assisted by Federal and State Government arts funding. During the first year of my fellowship we developed a working, networked software prototype and two

second-generation wooden Bodyselves that included important new innovations — a moving footboard and a back pressure sensing mechanism. They were tested and refined through public showings and evaluations during a three week residency at the Performance Space, Sydney. In the second year of my QUT fellowship we began to work with the Australasian CRC for Interaction Design (ACID) as part of their Australian Creative Industries Network (ACIN) research project, which revolved around investigating the potential of communication in distributed network environments. Their support included a major funding commitment and new collaborations with their research partners — the Royal Melbourne Institute of Technology (RMIT) Spatial Information Architecture Lab (SIAL), the Australian Centre for the Moving Image (ACMI), and the University of Queensland. We welcomed the opportunity that this extension of the project provided to refine our approach to ecosophical design and collaborative interaction and to develop a final dual-site, multi-user version of the work.

The decision to extend the project to a multi-user, dual-site installation meant that significant design changes were required. We decided that while the project could continue to operate around the idea of energetic transfer that we had established, the introduction of a networked dimension necessarily required a reinterpretation of the Me/Us/Other paradigm. This was

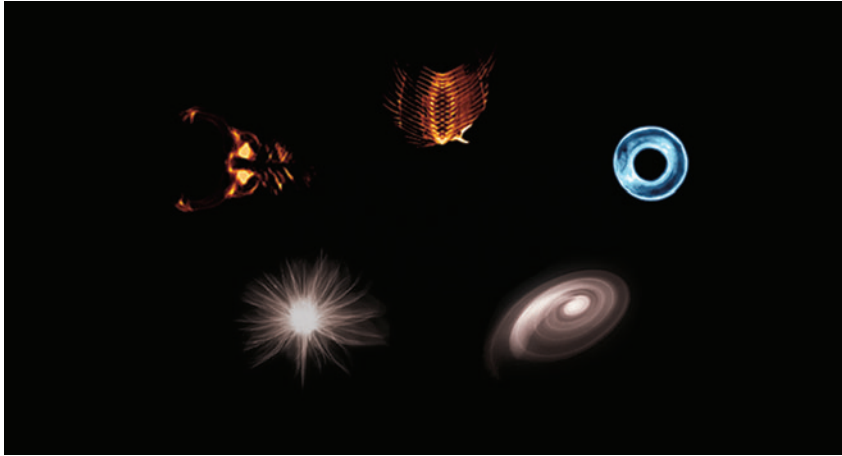
because interaction would no longer simply be with the online environment and the symbolic inhabitants we had created. We would now have to facilitate interactions between participants. Because of the ecosophical underpinning of the work, it was important to promote a sense of intimacy, collaboration and reciprocation between them. Given that participants would be interacting with the work from geographically separate locations, developing this sense of intimacy and shared experience presented a challenge.

We approached this challenge in two ways. The first was through systems design changes. I extended the interdisciplinary team working with the Transmute Collective to include computational designers Marcos Càceres and Cameron Owen. Their brief was to build a systems model that would accommodate a networked application. Because of his experience as an interaction designer, Marcos was able to augment the design structurally and conceptually. He created an underlying relational model for the work that incorporated a principle of computational layers. He proposed that such layers could inherently encompass the core principles of ecological systems that we had envisaged, such as evolution and exchange, but they could also facilitate the transfer of objects (or icons) between two parties. This insight led us to imagine an entirely new computational model based upon the notion of *transactions* —



exchanges between parties that would lead to change for all.³⁵ While the work's navigational structure retained the exploration of the Me → Us → Other (familiar → unfamiliar) progression, adopting this approach impacted upon the way that we envisaged the interaction through the Me, Us and Other states.

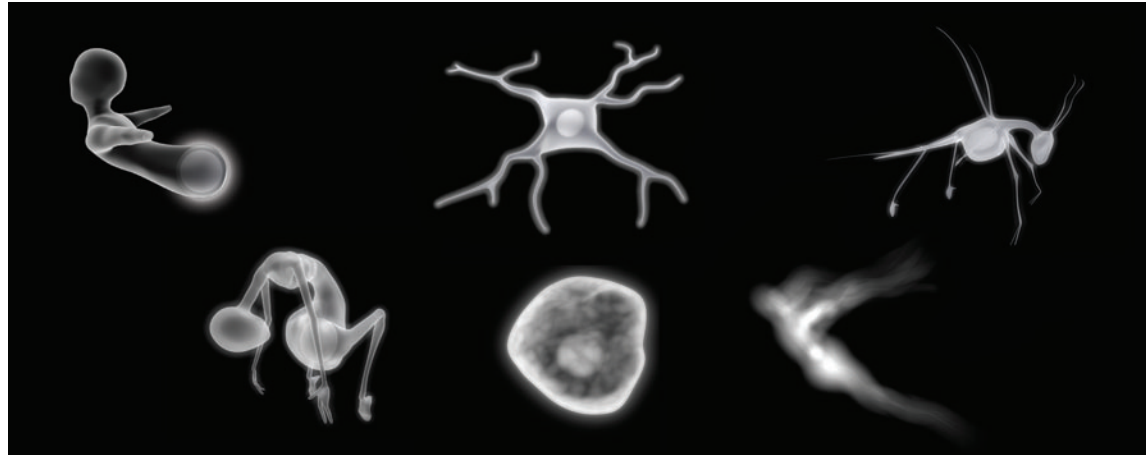
In the final design of *Intimate Transactions* each participant now controls a body-shaped avatar. Their movement on the Bodysshelf dictates the avatar's movement across a large, vertically orientated screen-space. This space is populated by a group of other inhabitants, which take the form of abstracted creatures designed in collaboration with 3D modeler



The internal objects of creatures, 2005
image: Benedict Foley

Stuart Lawson and graphic designer Benedict Foley. While each participant interacts within an apparently individual world, both worlds are connected via the network. This relationship is implied by the 'shadow' of the other person's avatar, which appears in real time on the screen. Navigating within the participant's own world, without the intention of transacting with any of the creatures or the other participant, implies an operation within the Me state. Interactions between a participant and the other inhabitants of the virtual world occur within the Us and Other realms. A progression therefore occurs from a place of relative familiarity/empathy towards the unknown.

Avatars and creatures, 2005
Clockwise: participant avatar,
(Force of) Torment, Conflict, Change
Permanence and Insatiability
image: Stuart Lawson



Participants are encouraged to explore the relational realms of Us and Other through a process of transactions. The first involves taking objects from the creatures (which appear as internal icons or image layers within them). The participant incorporates these objects into their own avatar. This strategy of collecting is a familiar game play strategy — commonly adopted to ‘win’ in computer games. Within *Intimate Transactions* however, the adoption of a strategy of collection implies consumption. As this consumption continues, it gradually impacts upon the world. The creatures are gradually depleted and their constituent environment progressively degrades. The pace of the world slows down. This effect is manifested through an increased sluggishness in the

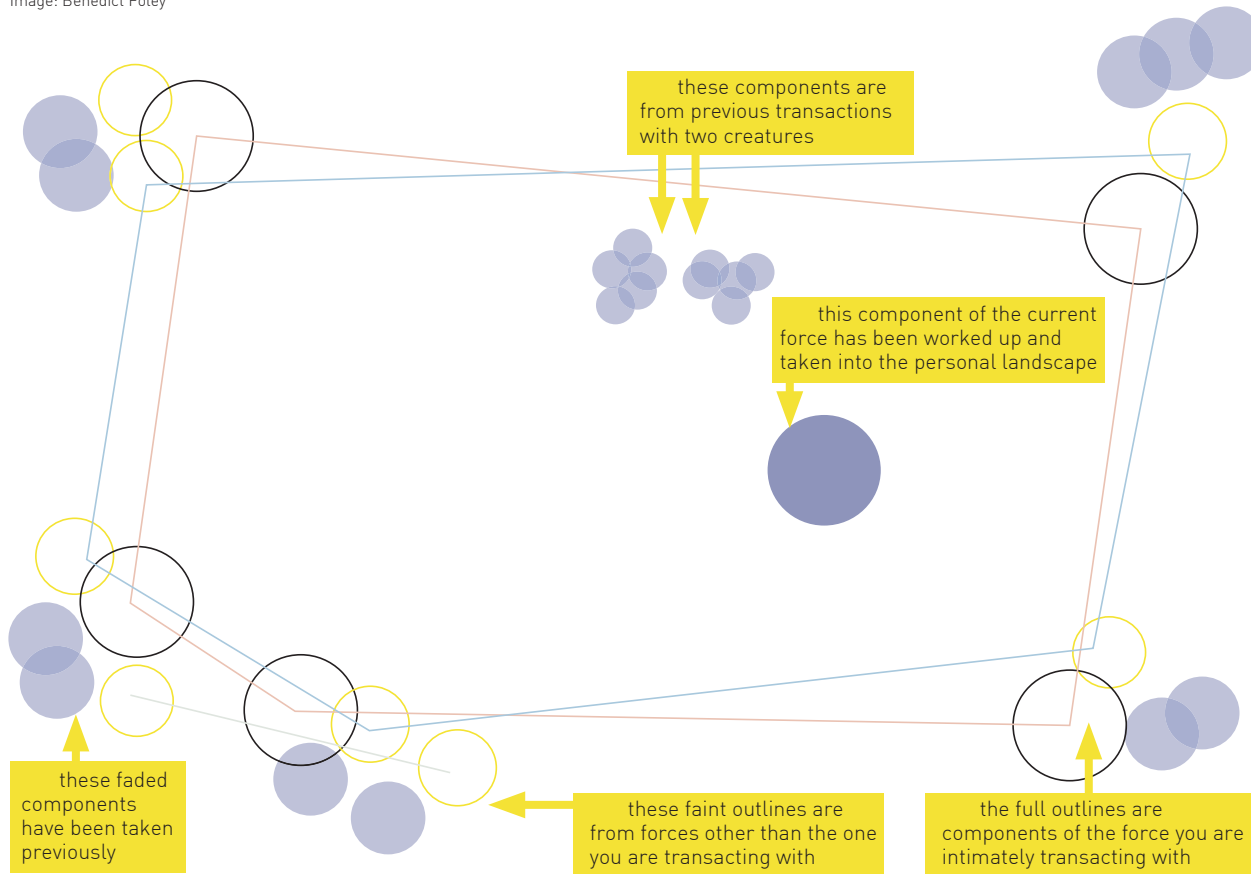
response of the computational system and the dimming of the screen.

At this stage, each participant operates within their own separate world, and their individual actions trigger local image and sound experiences. They are aware of the parallel user’s environment only through the shadow of the other person’s avatar which suggests their presence. However, the two worlds are conjoined and interdependent. This means that local acts of consumption flow through the system and every action also has ramifications upon the other person’s world. As their actions cause the depletion of their creatures and the slowing down of both worlds, participants are able to ‘meet up’ in a shared space and, at that point, they



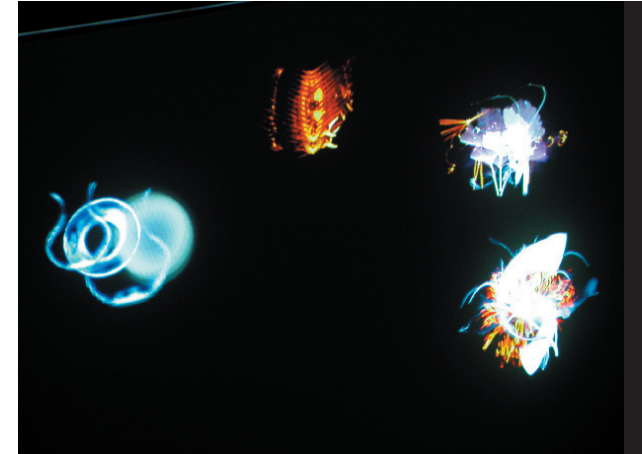
Design document describing an example of an internal state of a creature
Image: Benedict Foley

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right: [screenshot] Two participants transacting with each other across the network to return creature objects, 2005
photograph: Cameron Owen

far right: [screenshot] A collection of internal objects taken from creatures and collected by a participant, 2005
photograph: Cameron Owen



see a representation of the other participant's 'world state'. Here we are evoking ideas of 'overshoot' that are caused by ecological foot printing and 'entanglement' as a means of sensitising participants to the way that their actions can ripple through and affect distant, unknown others.³⁶

As participants gradually become aware of the ramifications of their consumption (and that of the other participant), they may use this knowledge to guide their subsequent actions. The only way to restore the health of the system is to enter into a transaction with the other participant and work collaboratively with them to systematically return the objects to the creatures. This raises the overall energy of the worlds again.

While these transactive exchanges developed around a simple game logic of collecting and returning objects, we have been careful to avoid direct competition between participants through outcomes that might be understood as wins or losses, or an experience that has a beginning, middle and end. Instead, our intention is that the distinctions between Me, Us and Other begin to dissolve as participants interact and transact — as they integrate component elements of the creatures and exchange them with the other participant then cooperate to restore the creatures and the energy of their own/shared environment.

This flow of local actions through the system was achieved through the unusual design approach of





Intimate Transactions Stage 3 Prototype, Performance Space, Sydney, 2004
photograph: Heidrun Lohr, Keith Armstrong

creating two separate, parallel universes that are joined through the computational layering and combined with networked and cross-affective processes.

Within this final (stage three) iteration of *Intimate Transactions* we also worked to increase the participants' sense of embodied experience by increasing the sensitivity of the input device and introducing both individual and shared participatory feedback. We retained the basic form of the Bodyshef because of its success in establishing embodied energetic flows between the participant and the screen interface and thus the occupants of the virtual world. We refined it however, by incorporating a tilting floor, driven by body balance and weight. This has increased its sensitivity to the movement of the feet. We also introduced a pressure-sensitive backboard, driven by weight and the positioning of the upper back. These more subtle modes of body action have dramatically increased the sense of performative engagement and embodiment, as well as perceptions of energy flow.

We have also increased the sense of shared experience and energy flow by incorporating a wearable haptic device. It was designed in collaboration with Pia Ednie-Brown and Inger Mewburn who are based at RMIT's Spatial Information Architecture Lab. The device generates vibrations through a pendant that is worn by each participant on their stomach. It produces vibrations that are created by a custom soundtrack and vary in intensity according to the proximity and character of the individual creatures that the participant is interacting with. A second haptic device has been incorporated into the Bodyshef. Through vibrations in the lower back/buttocks, it relays feedback from the other, remotely situated person's movements on their Bodyshef. Sensate pulses thus provide feedback to the participant from interactions with the creatures within the local environment and from the participant in the adjoining environment.

Collaborating in an electronically mediated work remotely via a distributed network has the potential to be an alienating experience yet, through this mechanism, a sense of bodily responsiveness and touch is generated between participants. At the conclusion of the experience, a bi-directional video stream allows each participant to see the person they have been collaborating with, but a sense of bodily intimacy has been established long before.





Intimate Transactions, Stage 3, 2004
photograph: Erika Fish

On Reflection

Over the past four years, *Intimate Transactions* has evolved from a single site, non-networked artwork to a multi-site, server-driven experience for two or more networked participants. At the same time, its audience interactivity, ecological engagement and collaboration have been extended to produce a complex, relational experience. While participants may choose to disappear into their own local worlds and never transact with each other, this will limit their experiences. If they instead choose to transact with each other, they capitalise upon the interaction and the subsequent increase in sensory experience that accompanies it. As action and reaction produce different states of balance and flow, a cascade of audio-visual and tactile feedback ripples back and forth through the server. This results in continual changes in the fluidity and movement qualities of the avatars; continual evolution of the visual icons; dramatic shifts in the source, timbre, quality and granularisation of the enveloping sound-scape; and variations in the tactile vibrations. The sensitivity of the system as a whole causes an interconnection of actions, events and consequential outcomes across multiple fields or environments.

Intimate Transactions has also evolved to extend the understanding of a 'relational total field image' within an ecosophical framework. On one level, it celebrates and encourages the possibility of the individual participant's exploration and agency. However it also bestows upon them a status that ecologists refer to as *keystone*, that is, "those species having a large, disproportionate effect, with respect to their biomass or abundance, on their community".³⁷ It is important to note that, while participants are able to trigger an extensive array of image, sound and haptic outcomes, they can never exert absolute control over the system as a whole, either individually or collectively. Nonetheless, the effects of their apparently private actions flow through the system to increase deceleration and atrophy or to restore and re-establish both worlds.

Intimate Transactions therefore helps to facilitate the understanding that cooperative collaboration is required to maintain the integrity, diversity and efficacy of the environments we occupy. It has been designed, in all of the interdisciplinary levels of its complexity, to create an experience in which participants can slowly begin to sense their shared roles within a complex web of energetic relations that connects them with other inhabitants within the work and, through metaphorical



association, with the ecologically and socially connected world beyond. Through event feedback, participants are encouraged to reflect upon their actions over time in order to gradually understand the range of local and networked factors shaping their experiences and their influence upon the environment. In these regards, it has embraced the goals of an ecosophical practice. It has become a realisation of Gablik's forecast of an art that is concerned with participation and social relatedness and has the potential to promote ecological healing.

- 1 Gablik, Suzi, *The Re-enchantment of Art*, Thames and Hudson, New York, 1991.
- 2 Armstrong, Keith, *Towards an Ecosophical Praxis of New Media Space Design*, PhD diss., Creative Industries Research and Applications Centre, Queensland University of Technology, 2002; Armstrong, Keith, 'Investigating Ecological Subjectivity: Intimate Transactions (Shifting Dusts)', in *PixelRaiders 2004*, Sheffield Hallam University Press, Sheffield, 2004
- 3 Heim, Micheal, *Virtual Reality and the Tea Ceremony*, Princeton Architectural Press, Princeton, 1998.
- 4 Merchant, Carolyn, *Reinventing Eden: The Fate of Nature in Western Culture*, Routledge, New York, 2004.
- 5 Botkin, D. and Keller, E., *Environmental Science: Earth as a Living Planet*, Wiley, Brisbane, 1997; Recher, H. D. Lunney and Dunn, I., *A Natural Legacy: Ecology in Australia*, 2nd edn. Macmillan, Botany, 1986.
- 6 Tony Fry, who suggests that the prospects for ecological sustainability are currently bleak, argues that, "we need to restore [nature] to a state of health, stop damaging it and start repairing what we can." Fry, T., 'Know Your Enemy: Defining the Problem of Unsustainability', in *Shaping the Sustainable Millennium – Conference Proceedings*, 2000 www.teamdes.com.au/pdf_files/Know%20Enemy.pdf [accessed January 20, 2006]
- 7 Merchant, Carolyn, *The Search for a Livable World*, Routledge, New York, 1992; Merchant, Carolyn, *Ecology: Key Concepts in Critical Theory*, Humanities Press, Princeton, 1994; Naess, Arne, 'The Deep Ecology "Eight Points" Revisited', in Sessions, G. (ed.), *Deep Ecology for the 21st Century*, Shambhala, Boston, 1995; Baker, Elizabeth, *Ecological Being/Being Ecological: Self, Morality and the Environmental Exigency*, PhD diss, Faculty of Science, Griffith University, 1997.
- 8 Fry, Tony and Willis, Anne-Marie, *Openings Into the Ecology of Information Technology: Impacts of Information Technology Briefing Paper*, The Ecodesign Foundation, 2001, p. 3. <http://www.changedesign.org/Pathfinding/Archived/IIT/BriefPart1.htm> [accessed January 20, 2006]
- 9 Ibid.
- 10 Also see Metzner, Robin, 'The Place and the Story: Where Ecopsychology and Bioregionalism Meet', *Trumpeter*, Vol. 12.3, 1995.
- 11 Fry, Tony, *A New Design Philosophy: An Introduction to Defuturing*, UNSW Press, Sydney, 1999; Fry, Tony, *Know Your Enemy: Defining the Problem of Unsustainability*, p. 2; Guattari, Felix, *Chaosmosis: An Ethico-Aesthetic Paradigm*, Indiana University Press, Bloomington, 1995; Conley, Verena, *Ecopolitics: The Environment in Poststructuralist Thought*, Routledge, New York, 1997.
- 12 In my 2004 paper, 'Investigating Ecological Subjectivity', I have expanded upon these issues and summarised this position thus: "We now live under the enduring mantle of a global crisis, a self-imposed act of unparalleled and seemingly irrational self-destruction, which we misname as ecological — WE are the crisis. This 'problem of ecology' indicates a crisis of human subjectivity and agency linked to a fundamental problem in how we image ourselves within the world".

- 13 Fry, Tony and Willis, Anne-Marie, *Openings into the Ecology of Information Technology*, p. 3; Fry, Tony, *Know Your Enemy*, p. 2.
- 14 The McGraw Hill Online Learning Center defines Deep Ecology as, "A philosophy that calls for a profound shift in our attitudes and behaviour based on voluntary simplicity, rejection of anthropocentric attitudes, intimate contact with nature, decentralization of power, support for cultural and biological diversity, a belief in the sacredness of nature, and direct personal action to protect nature, improve the environment, and bring about fundamental societal change." <http://www.mhhe.com/biosci/pae/glossaryd.html> [accessed January 20, 2006].
- 15 Naess, Arne. 'Eight Points' to a Deep Ecology, <http://www.haven.net/deep/council/eight.htm> [accessed January 20, 2006].
- 16 Guattari, F., *Chaosmosis, An Ethico-Aesthetic Paradigm*, p. 120.
- 17 Fry, Tony, *Know Your Enemy*, p. 2.
- 18 According to Fry, the task of rethinking design cannot simply involve developing projects in new ways within an existing design framework. Rather, it involves envisaging a new relational environment: what he refers to as a 'lifeworld'. This is not a neo-deterministic, overarching utopian project but is, instead, a series of emergent, contextually determined practices. Fry writes about considered, circumstantially appropriate actions, rather than a stock solution. Fry, Tony and Willis, Anne-Marie, *Openings into the Ecology of Information Technology*.
- 19 A notable exception is Joseph Beuys.
- 20 One exception is the Canadian artist Char Davies. See *Osmose and Ephémère* at <http://www.immersence.com> [accessed January 20, 2006].
- 21 Carol Gray describes 'practice-led' research as a mode of research that is, "initiated in practice, where the questions, problems and challenges are identified and formed by the needs of practice and practitioners." I use the term practice-led to accord with this approach while emphasising an iterative, creative research practice where theory and practice are inseparable. See Gray, Carol, *Inquiry Through Practice: Developing Appropriate Research Strategies, 1996*, cited in *Media International Australia Incorporating Culture and Policy, 1996*, <http://eprints.qut.edu.au/archive/00003999/01/3999.pdf> [accessed 30th September, 2006]
- 22 Fry, Tony, *Know Your Enemy*.
- 23 Bohm, D. and Peat D., *Science, Order and Creativity*, Bantam, New York, 1987
- 24 This approach will be discussed in more depth by Lisa O'Neill in her essay within this volume.
- 25 Transmute Collective, *Liquid Gold: The New Adventures of Ling Change*, dual-site media performance with streamed and online components, Powerhouse Centre for the Live Arts Brisbane, Australia and Site Gallery, Sheffield, England, 2001.
- 26 This content borrowed heavily from our earlier work, *Transit Lounge*, 1998.
- 27 Transmute Collective, *Transact (Flesh/Skin/Bone)*, Interactive Installation, State Art Galley, Hobart, Tasmania, 2002.
- 28 This practice was pioneered in Australia by Tess de Quincey, with whom I collaborated on a project called *Golden Circle* as part of 'Triple Alice' in Alice Springs, 2001.
- 29 The development of the Bodysshelf will be discussed in more depth by Zeljko Markov in his essay within this volume.
- 30 Dourish, Paul, 'Seeking a Foundation for Context-Aware Computing', *Human Computer Interaction*, 2001, pp 229-241.
- 31 Baker, E., *Ecological Being/Being Ecological*.
- 32 Calvino, Italo, *Smog, The Watcher & Other Stories*, Harcourt Brace Jovanovich, New York, 1971.
- 33 Baker, E., *Ecological Being/Being Ecological*.
- 34 We decided to limit the experience to this length of time because our research indicated that any longer would make the work logistically difficult in terms of the project's curation.
- 35 This will be expanded upon by Marcos Cáceres in his essay in this volume.
- 36 For explanation of these terms see Buchanan, Mary, 'Mind Games: Quantum Tricks That Read Your Thoughts?' *New Scientist*, Vol. 184, 2004, p 32.
- 37 Piraino, Stefano and Fanelli, Giovanni, 'Keystone Species: What Are We Talking About?' *Conservation Ecology*, Vol. 3.1, Iss. 4, 1999.

