

CORPOREAL_EXPRESSIONS: TRACING BOTH BIOMEDICAL AND EMOTIONAL LINKS FROM AN ARTISTIC PERSPECTIVE

PATRICIA ADAMS

What issues are involved in 21st century representations of corporeality from an artistic perspective? What parameters and methodologies are required when contemporary biotechnology and neuroscience are rapidly changing the ways we see ourselves and actively remodeling the human body? These questions drive my research and have formed the basis of my art/science practice and my investigations into both the biotechnical and virtual domains

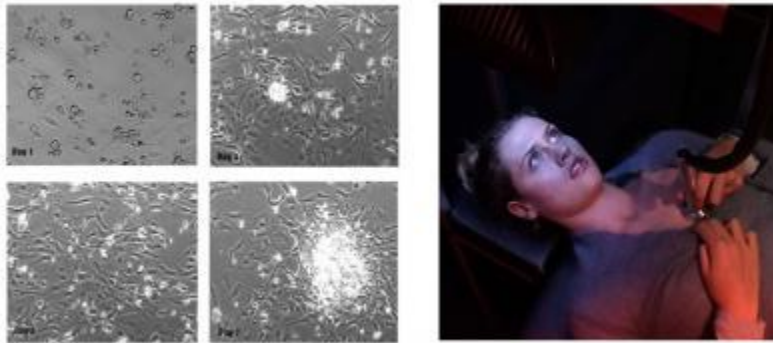


Fig 1 machina carnis, 2005, composite digital image showing adult stem cells changing into cardiac cells & an installation participant using the modified stroscope. © Trish Adams



Fig 2 Changing Fates matrilineal, 2009, digital video still. © Trish Adams



Fig 3 *mellifera*, 2009, in-world shot of *Neurone Schism*, a.k.a. Trish Adams, *Essential Beeswing* & *Nonnatus Korhonen*, a.k.a. Andrew Burrell. © Trish Adams

INTRODUCTION

This survey of my art/science research practice traces my experimental methodologies and considers my hybrid, interdisciplinary explorations into the nature of corporeality. It illustrates how my artistic reinterpretations of scientific experimental data led to the creation of artworks that implicate the viewer as a participant who can evaluate the socio-cultural issues raised by contemporary biotech research. Recontextualising scientific data in interactive artworks and placing installation viewers in a participatory role offers an alternative experience to that of direct laboratory engagement.

Whilst escalating levels of scientific disciplinary constraints impacted upon my art/science research processes, my observations and data interpretations deliberately maintained an acknowledged artistic focus. My artworks: “*machina carnis*”, “*Changing Fates_matrilineal*” and “*mellifera*” are introduced here to illustrate how I reinterpreted what is commonly termed ‘hard’ scientific research from the perspective of a visual artist. I introduced a sensual reading of the scientific experience, which resonated with the reintroduction of the Baroque aesthetic, so long rejected in favor of literate understanding and reason:

“(i)t is precisely the baroque’s subversion of the dominant visual order of scientific reason that makes it so attractive in our postmodern age...in its disparagement of lucid clarity and essential form, baroque vision celebrated instead the confusing interplay of form and chaos, surface and depth, transparency and obscurity.” [1]

My personal interpretations and responses have been paramount when developing hybrid spaces, and open-ended methodologies and during my innovative art/science research four fundamental questions arose:

1. What will occur if a visual artist engages with biomedical engineering as a first-person researcher?
2. Can two customarily divergent disciplines create hybrid spaces where artists can interrogate science?

3. How might an artist represent 'corporeality' at the beginning of the twenty first century?
4. What constitutes 'humanness' when both contemporary biotechnology and digital systems are rapidly changing the ways we see ourselves and actively remodeling the human body?

MACHINA CARNIS

The "machina carnis" project involved working in collaboration with a biomedical scientist, Dr. Victor Nurcombe. I was arguably the first artist to experiment on her own adult stem cells and change them into beating cardiac cells in the laboratory. [2] In these experiments, I contravened accepted scientific protocols by assuming the role of a 'human guinea pig' and carrying out my research in the first person on my own cells. The University ethics committee considered this a problematic methodology. They were concerned that, from a hygiene perspective, there could be a danger of transmitting life-threatening diseases when unscreened human material is put into equipment and cultured in the laboratory. Also, following the repercussions of the landmark He La case, [3] they had to take into account complex moral and ethical issues in the areas of social values and ownership. A first-person methodology was crucial to my research focus in spite of these problems. My commitment to a first person approach was based on the belief that it would increase empathy between the viewer/participants and the artworks and enable me to be more deeply immersed in the project. In the words of my scientific collaborator, Dr. Nurcombe:

"...(y)ou have entered into the heart of a research project as a core participant. You were at once subject and object, (experimenting on) your very "ground-state" – your own material." [4]

Eventually the University ethics committee granted clearance to the "machina carnis" adult stem cell experiments, and we could begin. The ensuing "machina carnis" artwork encouraged individual emotional responses from gallery goers that in some ways mirrored the intensity of my own reactions during the scientific experimental processes. The installation was interactive and placed the viewer in the position of a participant who brought the work to life through their individual engagement whilst evaluating the contemporary biomedical and socio-cultural issues it raised.

Creating art/science collaborations that interrogate scientific research and open channels of inquiry in the public domain lead to my second question: what meaningful criteria facilitate the establishment of art/science collaborations in the first place? Cross – disciplinarity is complicated by the fact that art and science have become increasingly polarized by the specialist techniques now inherent in cutting edge science. This division began after the age of natural philosophy when the disciplines of art and science diverged in the early modern era. [5] This separation means that, for an artist who intends to collaborate with a scientist, doubts about the possibilities of a significant engagement between a scientific specialist and a visual artist are bound to arise. However various collaborative models are developing. For example, Professor of Digital Media Art, Joel Slayton suggests that constructive links occur when artistic collaborations expand upon aspects of research in unexpected ways: "...although art and science share many characteristics, a special role for the arts exists in the evolution and deployment of technology – the implication being that by operating outside the conventions of traditional practice, unique and significant research enterprises can and will unfold." [6] In cases such as my own, spaces for an artist arise when the exploratory collaborative methodologies are adaptable and malleable enough to be opened up and create a different type of research dynamic. Once again I cite Dr. Nurcombe:

“(our collaboration) could only really be considered as “research” as I understand it, at a much more esoteric level; I would have thought we set out to do something quite “other”, something more open-ended. Research with other scientists is usually extremely focused and conducted within tight parameters; it’s not about possibilities so much as progressively excluding as many possibilities as possible. Our work was conducted much more in the spirit of “what if?” [7]

In other words, our art/science research methodology produced a hybrid entity which did not aim to mimic hard scientific research; rather it harked back to the cross disciplinary fluidity typified by the natural philosophers and, in doing so, allowed for the merging of different perspectives and the creation of organic outcomes.

The third question raised in this paper refers to twenty-first century representations of corporeality. In the "machina carnis" project, I explored scientific data from the perspective of a visual artist and acknowledged its corporeal origins. From the start of the laboratory experiments, I declared my partiality, and I clearly stated that I was making no attempt to emulate customary scientific claims to objective data readings. When I held my own cells in a Petri dish I did not document their behavior outside my body in a clinical way, I responded personally to the impact of this experience. Likewise, I regarded the time-lapse videomicrograph cellular image data, from my experiments, as more than a form of scientific documentary photography. With its intimate human origins and corporeal associations, this cellular image data was emotionally evocative and tactile. Professor Geoffrey Batchen refers to the semiotician, Charles Peirce’s definition of “contiguity.” Peirce states that contiguity was the indefinable dimension that was a focus of enquiry for the philosopher and theorist, Roland Barthes:

“Photography has never provided us with the truthful appearance of things, but it has guaranteed, through the magic of contiguity, the possibility of an emotional empathy across an otherwise insurmountable abyss...” [8]

I propose that closeness and emotional empathy was generated between my cellular image data and installation viewers. This cellular image data still carried a symbolic residue of my bodily presence, which in turn created an affinity with the viewers since it bore a metonymic relationship to their own cells.

CHANGING FATES

‘Changing fates’ is the term used by scientists to describe the ground-breaking process of chemically redirecting the growth of adult stem cells into a different type of cell. The artwork: “Changing Fates_matrilineal” expanded upon this research. It explored aspects of corporeality at the interstices between personal experiences and the symbolic traces embedded in the remediated cellular digital videomicrograph image data. The work included my adult stem cell digital videomicrograph image data and introduced the discourse surrounding mitochondrial DNA (mtDNA) and the female role played in genetic inheritance. My interest in mtDNA began when I read geneticist Brian Sykes’ description of new, more accurate sequencing techniques that have enabled him to take DNA directly from bone rather than inferring its structure from amino-acids in collagen. These increasingly advanced sequencing processes have led to the formulation of Sykes’ controversial theories that trace heredity via mtDNA. [9] Everyone gets their mitochondria from only 1 parent: their mother. For Sykes, MtDNA thus becomes a matrilineal indexical marker which, if the line of related women is unbroken, can survive through the female side from generation to generation. This mtDNA theory stimulated my curiosity about the underlying configuration of my biological relationship to my grandmother

Fig. 2 shows a photograph of my grandmother as a young woman. This is juxtaposed with a contemporary scientific digital videomicrograph still image of cellular data from my “machina carnis” laboratory experiments. I suggest that both these images carry residues of physical presence and form different types of portraits. However, this proposition is complicated by the fact that my adult stem cells have been changed in the laboratory into a different type of cell – the cardiac cells pictured – rendering their relationship to me physically ambiguous. Contemporary biotechnology has introduced layers of speculation and uncertainty into other corporeal connections.

CORPOREALITY

The final question presented in this paper considers our changing understanding of ‘humanness’ at a time when biotechnology is remodeling the human body and digital technologies offer us avatar selves in virtual domains. I was interested in the way a virtual environment might impact on my sense of self and my understanding of corporeality. With artist/researcher, Dr. Andrew Burrell I created the “mellifera” project that explored corporeality and identity in virtual worlds. “Mellifera” was a mixed reality project which included both real-time and virtual sites and a variety of participatory tropes in gallery spaces and on line. It drew poetic inspiration from direct research and observations of honey bee behaviors with Professor Mandyam Srinivasan’s Visual and Sensory Neuroscience Group, Queensland Brain Institute, The University of Queensland (UQ). The “terra.mellifera” virtual environment was constructed in Second Life® (SL) and was home to self generating life forms and an imaginary species of virtual bee, known as ‘mellifera.’ This was my first experience of SL, and I found that whilst my avatar was, as far as I know, a digital representation of myself inworld; I invested her with the emotional and physical characteristics of my real world corporeal self. Consequently, when anthropologist and SL researcher, Tom Boellstorff suggests “virtual embodiment is predicated on a discontinuity, the gap between virtual and actual,” [10] I take this as implying that an opening out of our scientific and philosophical frameworks is required to incorporate expanded constructs of ‘humanness’, the nature of living organisms and the impact of recent digital technologies on these reconfigured categories.

OTHER BEINGS

The extensive body of research on posthuman entities and actors that are not human paves the way for expanded notions of ‘self’ and ‘other’. Consciousness Professor, Donna Haraway pursues her ongoing entanglements of species and states:

“(f)or many years I have written from the belly of powerful figures such as cyborgs, monkeys and apes, oncomice, and, more recently, dogs. In every case, the figures are at the same time creatures of imagined possibility and creatures of fierce and ordinary reality.” [11]

Media theorist, Jussi Parikka discusses the history of etymological studies and highlights the contemporary relevance of pioneering ethological research. Parikka outlines the possibilities that insects and other nonhuman animals offer for rethinking media and for challenging our views of the natural and the artificial. [12] This research resonates with the corporeal complexities evoked by developments in biotechnology and opens the door to an ongoing expansion of what Haraway terms the “Principal Others to Man.” [13] My recent residencies with the Visual and Sensory Neuroscience Group echo this research into inter-species links. At UQ, I experienced being in close proximity with honey bees in the largest indoor bee facility in Australia. I was initially surprised that, for most experiments in the bee facility, we did not wear protective clothing. In this space, honey bees and humans went about their business,

sometimes in contact each other and sometimes not. This unusual interspecies juxtaposition gave rise to my video: HOST (<http://vimeo.com/channels/115324#12708853>) for which bees were trained to come and eat from the palm of my hand. During my residency, I developed not only knowledge of the skills manifested by these amazing insects, but also an unexpected proximity to these 'non human others.'

SUMMARY

The art/science projects described here have all created layered networks of physical, emotional and sensory encounters. The research has involved cutting edge scientific technologies and the artworks have discretely featured the affective qualities of media technology. My innovative methodologies have traced both biomedical and emotional links from the perspective of a visual artist. Inserting a personal response into the reinterpretation and recontextualisation of the scientific data has enabled me to embrace contemporary theories about non-human 'others' and explore self and corporeality. Burgeoning virtual worlds and the newly discovered pluripotent characteristics of many adult stem cells have opened the door for potentially wide ranging changes to our physical structure. What once appeared immutably 'human' may no longer be so. In the artworks described here reflections on memory, emotion, materiality and ephemerality have been creatively interwoven with recontextualised and reinterpreted biomedical research. This has given rise to works that stimulate further debate as we strive to quantify our 'humanness' at the beginning of the twenty-first century.

References and Notes:

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