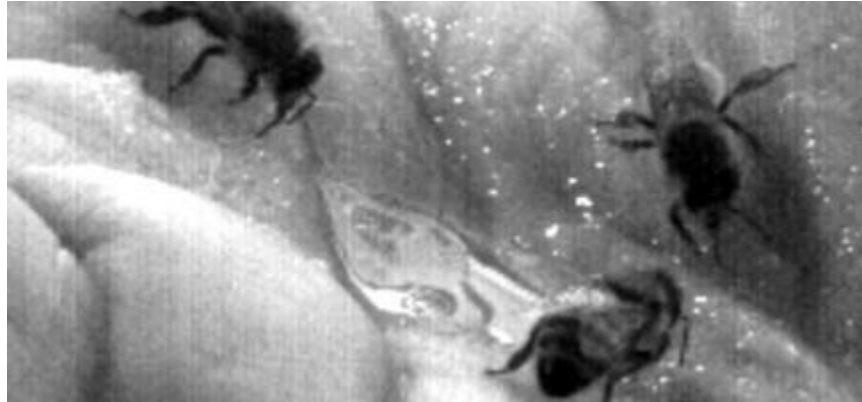


# SHIVERING BOUNDARIES

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My research explores the nature of corporeality in the biomedical sciences and queries the status of our “humanness” in the early the 21st century. I will discuss the intersections between art, biomedical science and honey bee research at the Queensland Brain Institute.



*HOST, 2008, digital video still. © Trish Adams*

## INTRODUCTION

During laboratory experiments on my adult stem cells I felt that looking at my cells through the microscope was like looking into another world where I was able to make first-hand observations in a domain of non-human ‘others’. The characteristics of the cells, observed at a microscopic level, highlighted issues relating to corporeality, sentience and cellular ‘consciousness.’ With the aim of finding out more in this field, I became an artist in residence with Professor Mandyam Srinivasan at the Queensland Brain Institute (QBI.) [1] I observed experiments being carried out on the ‘cognitive’ capacities of the European honeybee’s small brain. In this paper I will discuss how the artworks: *machina carnis* and *HOST*, that developed out of my art/science collaborations, illustrate my research into the nature of ‘humanness’ and examine the ‘shivering boundaries’ between mind – body – self at first hand. [2] I will describe how the methodologies I employed created alternative ‘habitats’ by transferring cells from my body to other sites and then by entering into a different domain to carry out research amongst honeybees.

## ORIGINS

When I discovered an abandoned kymograph, I traced the historical origins of this archaic machine for measuring physical and nervous impulses. [3] It inspired me to create art/science projects that referenced galvanics and nineteenth century experiments into electrical stimulation of tissue. I parodied early scientific attempts to quantify the human body that used the ‘new technologies’ of the day by such pioneers as Carlos Matteucci. [4] During this period, I read an article from a 1999 issue of the journal: *Science*, which declared that pluripotent adult stem cell research was the scientific ‘breakthrough’ of the year. [5] This article described how recent biomedical research into adult stem cells indicated that

some adult stem cells had the ability to become different kinds of cells. This ground breaking research resonated with my own explorations since it suggested potentials to fundamentally change the very structure of our bodies at a cellular level. In order to investigate this exciting theory I began my *machina carnis* project by collaborating with an adult stem cell research scientist: Dr. Victor Nurcombe.

## MACHINA CARNIS

The *machina carnis* scientific process began when a doctor took a sample of my blood from which we could separate and culture the stem cells under laboratory conditions. After three days in culture, the drug 5'AZT was added to induce the adult stem cells to become distinctive, muscle-forming cells. At the same time a mixture of cardiac differentiating factors, with a proprietary molecule, were also added in order to change the undifferentiated stem cells into cardiac cells. In response to Dr. Nurcombe's unique chemical mix, the cells reproduced, matured and began to develop characteristics of heart cells. After the laboratory experiments were completed I reviewed the scientific image data and decontextualized it in the form of an interactive installation. My aim was to create a sensual reading of the scientific experience and draw each participant into an individual relationship with the *machina carnis* artwork. The installation employed open-ended methodologies, which encapsulated manipulable systems where the boundaries between the body and its environment were in a constant state of interplay and flux. Creating this type of permeable membrane between the artwork content and the individual participants reflected my own engagement with the scientific processes. My first-person research in the role of a human guinea pig had contravened accepted scientific protocols and exploded the customary tropes of scientific objectivity. By personalizing my engagement with both the experimental techniques and data, I aroused emotional links and raised questions about contemporary stem cell research and the status of our 'humanness' at the beginning of the twenty-first century.

## CONSCIOUSNESS

I was motivated to find out more about cellular consciousness. I wanted to learn how the stem cells I had observed under the microscope might 'know' how to behave and interact with each other, so I moved from my collaborative project in the biomedical sciences to participate in research on the European honey bee. I became a visiting artist with Professor Srinivasan and the Visual and Sensory Neuroscience group at QBI. By studying the behavior and nervous systems of small insects, such as bees, Professor Srinivasan and his group are able to shed light on the cellular processes and functioning of larger brains such as our own. At QBI, I participated in experiments in the largest indoor bee facility in Australia. I had not realized that, in this unique space, we would walk amongst the bees without any protective clothing. From my perspective, after being conditioned to avoid contact with bees, this experience was a revelation. At first I was intimidated, and I felt vulnerable, but after a while I became entranced by the opportunity to engage in close proximity with these 'other beings;' to enter into aspects of their world.

## NON-HUMAN OTHERS

In his recent book media theorist, Jussi Parikka gives examples of late nineteenth century ethnographers and twentieth century media theorists and ethologists who have described the spatial conditions of variation found in all sentient animals and entities. [6] I felt that, during my first hand research at the bee house, I was experiencing much of what Parikka discusses. In the bee house, the honeybees and human

beings went about their business side by side in their parallel operational spheres. Honeybees and humans were functioning independently but juxtaposed within the same habitat. I found this experience of intersecting domains a very powerful one. It became the underlying premise for my video: *HOST* where the honeybees were trained to fly down, land and eat honey from the palm of my hand. When the bees landed on my hand to eat, they entered into an unusual symbiosis with a human being – a poignant example of interspecies contiguity. In the video, my hand appears immense and, whilst the possibility of being stung renders me vulnerable, the bees also seem vulnerable as they stumble over this alien, fleshy terrain in search of food.

## SUMMARY

During my research, considerations of inter-relational pathways and connections have encouraged me to move beyond customary categorizations and environments. I use the term: ‘shivering boundaries’ to describe the developing relational systems that evolved as I explored permeable membranes in both cellular and inter-species domains. The *machina carnis* and *HOST* projects demonstrate slippage between contemporary biomedical cellular research and current enquiries into non-human ‘others’ such as honeybees. In the light of my research, expressions and representations of corporeality embrace open-ended and interwoven territories that accommodate malleable, hybrid identities.

## References and Notes:

1. Queensland Brain Institute Website, “Professor Mandyam Srinivasan FAA, FRS - Visual and Sensory Neuroscience,” <http://www.qbi.uq.edu.au/professor-mandyam-srinivasan-faa-frs> (accessed March 26, 2012).
2. For more information, visit Dr. Trish Adams’ Website: <http://www.trishadams.tv>
3. Montclair State University – College of Humanities and Social Sciences Website “Simplified Kymograph,” [http://www.chss.montclair.edu/psychology/museum/x\\_233.htm](http://www.chss.montclair.edu/psychology/museum/x_233.htm) (accessed March 26, 2012).
4. Portraits of European Neuroscientists Website, “Carlo Matteucci,” <http://neuroportraits.eu/portrait/carlo-matteucci> (accessed March 26, 2012).
5. Gretchen Vogel, “Capturing the Promise of Youth,” in *Science* 286, no. 5448 (1999): 2221-2416
6. Jussi Parikka, *Insect Media* (Minneapolis: University of Minnesota Press, 2010).