

Materiality and Immateriality

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Abstract

In this paper I will examine materiality and immateriality in the expanding area of research within art as creative practice. Emerging technologies have created new materials and processes that construct different social realities. These materials and processes are being compressed into many art school agendas under historical materially constituted areas of study, predefining areas of exploration for artists and students. The role of art, based on a dominant hierarchical material base has controlled emerging practices, collaborations and engagements. The contemporary technologically mediated art student is confronted with art practices from among other things: Biology, Microbiology, Animals and Plants, Ecology, and Medicine and the Body Physics, Nonlinear Systems, Nanotechnology, Materials Science, Geology, Astronomy, Space Science, Global Positioning System, and Cosmology, Algorithms, Mathematics, Fractals, Genetic Art, and Artificial Life. I will draw examples from contemporary art practice to explore ways in which art schools need to confront key issues that will define their future. These concepts involve new materials that question the presentation of art, initiating current debates such as the role of Bio art¹ and new media art practice² within the gallery context. I will also look at examples expressed by art students in connection to the making and researching of art.

Keywords

Nanotechnology, Materiality, Immateriality, Science, Collaborations.

In this paper I will examine materiality and immateriality in the expanding area of research within art as creative practice. Emerging technologies have created new materials and processes that construct different social realities. These materials and processes are being compressed into an art school agenda under historical materially constituted areas of study, predefining areas of exploration for artists and students. The role of art based on a dominant hierarchical material base has controlled emerging practices, collaborations and engagements. The contemporary technologically mediated art student is confronted with art practices from: Biology, Microbiology, Animals and Plants, Ecology, and Medicine and the Body Physics, Nonlinear Systems, Nanotechnology, Materials Science, Geology, Astronomy, Space Science, Global Positioning System, and Cosmology, Algorithms, Mathematics, Fractals, Genetic Art, and Artificial Life.

What must artists do differently than they always have done to prepare to participate in the world of research? They must broaden their definitions of art materials and contexts. They must become curious about scientific and technological research and acquire the skills and knowledge that will allow them to significantly participate in these worlds. (Wilson 2001, 39)

In 2002 Gerfried Stocker, the director of Ars Electronica presented 'Takeover' as the event's artistic theme. This theme was in part a direct challenge to the institutions of art to define themselves in the face of emerging technologies.

The scene is defined by self-reinventors and spin-offs who have acquired their softskills in direct dealings with the material or as by-products of the media design institutes, most of which are not oriented on art but on the training of media workers. It is rife with the massed potential of pros proceeding with self-assurance and possessing all the prerequisites and skills to implement their own ideas and not just to provide content to fill the design vacuum of commercial software.³

In this context we become aware that in the face of a shift towards a self taught technologically mediated culture we need to work out the relevance of what is delivered. The 'institutional art' has been attempting to hang on to its traditional ground by the promotion of a skills base ideology. The art institutions have developed new inclusive systems of delivery and forms of training but they are still predicated on tradition. We must not see art school as the funnel of art related activities but introduce critical thinking and practice in investigating from a mediated cultural perspective.

Sally Jane Norman states, in reference to the changing aspects of discipline areas, that;

Efforts to mitigate what may be construed as repressive connotations of this term – discipline having to do with establishing authority – have spawned much productive inter-, pluri-/ multi-, and trans-disciplinary discourse and/or practice. In creative arts institutions in particular, where challenging disciplinary confines is an essential part of learning processes, terms like “nomadology” may be favoured for their resonance with contemporary cultural theory and attitudes.⁴

The experiment here seems to be attempting to solve a problem that might need a totally new strategy to 'privilege mobility and mutual enrichment of disparate mindsets'.⁵

What is the future for traditional art school disciplines?

In the face of the dominant research culture within many Universities what is the core essential aspect of art that should not be lost in the convergence of old world disciplines? Can art alone deal with cost and re-identification of emergent areas of practice/research? Can you imagine electives in Chem-Art, Bio-Art, Nano-Art, Health Science-Art Cosmology-Art?

The significant attitude shift in recent years between artists, sociologists, philosophers and scientists sees each discipline reaching out beyond their own 'traditional' domains. This comes at a time when global economics, fuelled by new developments in science and digital technology, provides increasing opportunities for artistic and technological interactivity.⁶ Artists have not always been among the first to critic technological advances through their practice. The use of electronic and digital technologies for visualising and expressing ideas is becoming commonplace in the scientific arena. The mutual interest in shared electronic and digital tools is fostering a common language between artists and scientists.

This interest in a common language needs to become part of the fabric of the art school. The Internet and network communications further enable artists and scientists renewed access to a hybrid space of ideas and projects. Consequently, there exists an exciting opportunity for art schools within universities to develop collaborative partnerships between disciplines whereby the artist, sociologist, philosopher and scientist work together to explore creative interchange. The emerging technologies focus on social interaction and communication, which has always been a traditional role of the arts in society. These collaborative partnerships are ways of expanding the students' ability to access new materials, concepts and equipment beyond the economic means of the art school.

With the evident convergence of interests, and ever increasing levels of computer literacy developing through school systems, interdisciplinary collaborations or partnerships should be both a natural consequence and desirable element in higher education institutions.

The conceptual ephemerality of new technologies has demonstrated that there is a need for a different approach to the concepts of *materiality and immateriality*. The purpose is not to create a

blended homogenised convergence, but to move towards the creation of a neutral environment. This environment would allow for the remix of culture and the reshaping of potential for convergence.

The evolution within art schools from multi-disciplinary to inter-disciplinary to trans-disciplinary practices has only allowed for repetition of an emerging matrix of existing possibilities. Other forms of hybridity and convergence have also maintained a strong linear developmental but based around pre-existent material processes.

I want to introduce two third year students' statements to reference the changing context to what is happening to materiality from a student perspective.

The idea that the inherent meanings in objects can never be avoided or fully understood becomes too much. It therefore makes it difficult to produce anything about anything and it becomes frustrating to do anything. The work is always going to be a failure. The production of work and the dialogue of opposites in the work, its makeshift theatricality as well as the surface quality and visual impact of the work act in a way to create a distraction from this always failure nature of the work. They act in a way to imitate other art forms to convince the viewer of the work's importance and in some way legitimise the work. The mass of stuff tries to compensate for this overwhelming sensation of doubt but in turn creates more doubt in the hope that something of value will happen, even though not much is going on or nothing is specified to be going on.⁷

In another example the students develop the concept of the project.

When we began work this semester we started with the half-joke 'it's going to be about love'. And in a way, it is. It's about absence, fragmentation, change and the failure to find meaning in something we once thought we cared about. It's about the moment after passion ends and interest wanes, and the moment after that when things continue just the same as before, an affront to meaning itself. It's been said that the underlying cause of the decline of art is the artist's lack of passion about the subject. We present works which are concerned with this and the nature of amateurism, indifference, and apathy, and employ a 'near enough is good enough' aesthetic to discuss this. As videos remain the popular response to boredom and apathy, we have focused on the medium. We eulogise the end of art, the end of our collective moment, and the end of belief in progression and decisive change. We pre-enact the end, and the anticlimactic persistence of the moment after.⁸

What these student statements are suggesting, is a shift towards questioning the role of materiality in the art school. The statements challenge the art school in the face of new world orders by asking the institution to develop a critical stance towards the statements. The statements test the inherent philosophical attitudes of the project constructed around the views of the staff.

The statements reflect a saturation point where the students themselves are faced with an ever increasing deluge of media, not allowing time for critical reflection and discernment. This saturation does not lead to an exclusion of materials but rather a reevaluation of material relevance and signification. What Nicholas Tresilian calls 'immaterial'.

Tresilian suggest that the two cultural phenotypes (innovative and iterative culture) differ most overtly in their relationship to the magical/immaterial aspects of meaning – 'which I shall conflate here, [...] into the single term the *immaterial*'.⁹

Tresilian goes on to say

By the *immaterial* I refer to the use of semantic attractors which systematically reverse the Aristotelian principle of contradictions – the rule that nowhere in the real (= rational) world can an object both have and not have the same properties: black cannot be white, positive cannot be negative, and so forth. In the domain of the *immaterial*, positives and negatives, black and white, coexist simultaneously in the same semantic entity, which to be perceived must have a material existence, but which embodies a meaning which is not the rational/Aristotelian sense ‘real’ .¹⁰

What is being proposed here is a need for a thorough reappraisal of the position of art schools in relation to current social, scientific, and philosophical awareness of materiality. We are at the point in time when the art school has to define itself in the face of institutionally determined categories of research, new science and technologically mediated culture.

I am suggesting that there is a shift from the position that art has held in defending its *raison d'être*. It no longer needs to bend and reshape itself to reflect every funding cutback or twist so it can fit itself around urban transport planning if there is the scent of funds. Art is in a position to respond to evolving social change and propose new directions in comprehending scientific and technological advancement. The flexibility of non specific outcomes gives the art school potential to create their own relevance based immateriality/materiality that expresses a humanistic view towards new technologies and new sciences. We have the potential to utilise and develop the universities’ struggle for creativity and innovation from within.

The attempts at evolution within art schools, from multi-disciplinary to inter-disciplinary to trans-disciplinary practices has only allowed for the repetition of a matrix of existing material possibilities. Other forms of hybridity and convergence have also maintained a strong linear developmental based around existing processes.

Science is presenting us with new understandings and different approaches to concepts of *materiality and immateriality*. The role of the art school as a unique entity incorporated in universities is needed to create a blended homogenised convergence of disciplines. This could be achieved by a move towards the creation of neutral hybrid research environments between different discipline clusters. This environment would allow for a remix culture and reshaping the creative potential of convergence.

I would like to use the example of SymbioticA (initiated in 1996) as an on-going research centre investigating the use of tissue technologies as a medium for artistic expression.

SymbioticA - The Art & Science Collaborative Research Laboratory in the Department of Anatomy & Human Biology, University of Western Australia - is an unusual artist-run research laboratory dedicated to the exploration of scientific knowledge in general and biological technologies in particular from an artistic perspective. SymbioticA will be awarded the Prixars, Golden Nica at Ars Electronica in September 2007 for their work in this area. Their exhibition at will focus on a number of artist’s projects that have been assisted by SymbioticA residencies. Recently SymbioticA have developed a Master of Bio Art a unique postgraduate science degree offered through the Faculty of Life and Physical Science, University of Western Australia. It enables students to undertake a Masters of Science in Bio Art to engage in wet biology practices in a biological science department, and in the process, return to the visceral state of the body.

The visions of the future presented by artist such as those who work at SymbioticA have us confronting new materials and ideologies. The Master of Bio Art within the faculty of life and physical science challenges the art school as the sole arbiter of art with in the institutions. The

students confronted by this vision are trying to define their artistic intention and must be able to refer to the current potential materials and ideas.

I would like to use relevant processes in my own practice, to look at art and science nexus in the area of Nano-Art by looking at the *Midas* project. The *Midas* project starts at the nano level investigating the space where skin meets gold.

Midas examined what is transferred when touching the material of gold. Using the Atomic Force Microscope which uses touch instead of optics a skin cell was sample in contact mode the cantilever is lowered on the surface of the skin cell. This mode explores the topographies gathering deflection data that is translated to produce a visual image.

The space between objects is captured initially by comparing data under different experimental conditions. The *Midas* project when presented as an installation with the use of sub sonic speakers will make the infinitely small audible and palpable. The installation will presents what happens at the point of transition where the first atoms of skin meet the first atoms of gold. Kevin Raxworthy a Master of Electronic Art student from the Studio of Electronic Art at Curtin University of Technology collaborated with me to analyse the data from the AFM force spectroscopy. The various sets of data were processed translating the relevant information into sound files.

What Nanotechnologies are determining in relation to matter and materiality is confronting the arts that in turn is constructing reactive desires to return to Victorian material qualitative values. Neal Sephenson's book *Diamond Age* reveals through the use of the Victorian attitudes a binary contrast with the world of nanotechnology. (Stephenson 1995) Nanotechnologies and Nano-art throw into question the possibility of materiality by interrogating what constitutes the worlds 'immaterial substrates' the building blocks of matteriality.

The National Science and Technology Council report to the United States Congress entitled '*Nanotechnology : Shaping the world atom by atom*' encapsulate in its mission a disregard for the integrity of materiality . It goes on to state in its introduction that 'the emerging fields of nanoscience and nanoengineering are leading to unprecedented understandings and control over the fundamental building blocks of all physical things'. (Amato 2002)

In addressing the relationship of nanotechnology to materiality we could draw the comparison between binary code and atomic particles. The machine trans-codes and re-codes binary data to interpret immaterial representation, not unlike self replicating nanobots that can reengineer objects. The atomic particles swarm together to represent a reconstruction of the material object. Colin Milburn refers to science fiction writers whose nano-technological musings have informed science and entered our conscious understandings of what constitutes matter. Milburn uses references from science fiction writers who explore apocalyptic nano-threats to territory of the body leading to the re-territorialising of a post-biological body. (Milburn 2005)

What Roy Ascott suggests is to explore the concept of Nanotechnologies as

tearing the fabric of the physical world to expose the instability of its immaterial substrate. Whilst providing the basic elements for its material reconstruction. Nano offers the means of reality checking and reality building a super imposition that finds its continuum in the field of consciousness. (Ascott 2005)

BC. Crandall suggests that Nanotechnology is "simply a descriptive term for a particular state of our species' control of materiality," a step in our species-destining towards "absolute control".

(Crandall 1992 viii) This absolute control has the human pursuit of controlling material in making art question the underpinning reality of materiality.

I have presented a number of points that need to be contextualised and drawn together to create a current understanding of developing an inter-faculty with matter . On one hand, we have art students being offered new understandings of materials through the ever-expanding advances in science and technology. These students, who are confronted by the collapse of space and time through a deluge ubiquitous information technologies which contextualise a techno-mediated understanding of art. What is dealt with in Tresilian's concept of *immaterial* is relatively mirroring current thinking in Nanotechnology.

The *materiality* that Nanotechnology reveals is posing more questions relating to the material world and our consciousness. The topics that will be of interest to today's students are investigating what constitutes the boundaries of materials, materially and the body.

Statements about Nanotechnologies and their abilities to rebuild and re-engineer nature atom by atom, via semi autonomous nanobots will reconfigure our understandings of being human. (Amato 2000) This nanologic will continue reforming our understanding of living, of embodiment and what constitutes the basic atoms that of the creative living cell.

If art schools are to progress towards a trans-disciplinary approach then these questions that confront the fundamental basis for art schools must be seen as the point of convergence.

Footnotes

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2. *Refresh! The First International Conference on the Histories of Media Art, Science and Technology*, Banff New Media Institute, The Banff Centre, 2005 <http://www.banffcentre.ca/bnmi/programs/archives/2005/refresh/lisiten.asp> (accessed October 1, 2006).
3. Stocker, Gerfried "Takeover – Who's doing the art of tomorrow?", *Ars Electronica*, 2001, http://www.aec.at/festival2001/takeover/theme1_en.html, (accessed July 24, 2002)
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5. Ibid.
6. Thomas, P. (2002). Why do my eyes hurt? BEAP 2002 – The Biennale of Electronic Arts Perth. P. Thomas. Perth, John Curtin Gallery.
7. Claire Peake, extract from review statement (3rd year, Curtin University of Technology, 2006)
8. Sophie Hamilton, Sarah Salvidge and Virginia Withers, extract from review statement (3rd year, Curtin University of Technology, 2006)
9. Nicholas Tresilian, "Immateriality: Towards the Immaterial" (paper presented at Altered Sates: transformations of perception, place and performance. University of Plymouth, 2005).
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Biographical Notes

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