2001

Your place, my place, interface

Lelia Green (Ed.)
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Your place

My place

Interface
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Preface

Lelia Green

*Your place, my place, interface* has been one of the most exciting and stimulating experiences in my academic career.

These students, collectively and separately, exhibit a wealth of talent. They are passionate about many things: the landscape, the virtual, the real; rocks and the environment; health and justice.

Graduate students have already served many years of scholarly apprenticeship and, as this project clearly demonstrates, they need only the slightest encouragement to find their voices.

In this collection of essays these students-Honours and Masters-prove that the waiting in the wings is over, a new generation of scholars has arrived on the stage.

Read and enjoy.

Lelia Green

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Editorial

This publication is the output of 2001 School of Communications and Multimedia post-graduate cohort. For many of us this is the first time our own work will be seen beyond the assignment or the essay destined for the tutor. For students from the interactive multimedia and film and video streams communicating in the written word without the assistance of pictures and electrical gadgetry can be a frightening experience. Further, most of us had little experience in creating or simulating an academic journal with all that it entails. Still, with assistance of our publications unit coordinator Lelia Green we soldiered on. Given that nearly half of us came from the interactive multimedia stream one of the big questions asked was whether we published on-line or on paper? Nostalgia emerged victorious and hence our journal is something you can put on the shelf.

The students in this group come from a variety of disciplines and this is reflected in the content of the articles. If there is a common strand in the articles it that most relate, one way or another, to Cultural Studies. Robin Quin, our head of school stated, in an undergraduate unit outline that the mantra of Cultural Studies is class, gender, race and place. A scan of the abstracts shows that these areas are still rich fields for speculation and discussion. Whether you are peering into a working nuclear reactor, dealing with the behaviour of white males in Japan or collecting rocks in the Murchison, Cultural Studies, with its interdisciplinary approach, produces interesting questions and answers.

The collection starts with a walk through ‘the Botanic Garden’. Sonya Sears’ article considers whether these gardens celebrate native or commodify it. The native/culture/commodity interface proves a rich arena for analysis and reflection.

Richard Zabilski explores interfaces of a different kind. Evaluating the progress of the computer interface- the software where the wetware meets the hardware- Richard asks how it could be different and the benefits which can be expected in the future.
Donell Holloway’s interest is in the role of the Western Male ('zero') translated into Japanese society (where he becomes a ‘hero’). She draws upon her experience of working in Japan to examine issues of race and gender as explored through interaction with the cultural gendered ‘other’: is a context where the Westerner is, unusually, ‘othered’.

When do high school students start their destination into University? Jack Seddon argues that a supportive virtual environment can help school students metamorphose into university students. Working a Web site created with material shot by school students, Jack and a team of ECU students and staff have created a transition zone which school students can use to help themselves prepare for university life. Whereas ‘Click Around ECU is a cyber communication competition with a target audience of school students,

Katherine Kaime’s interest lies in the life and death realm of communicating anti-AID’s messages to vulnerable African populations. This is not an Internet campaign, but one grounded in culture and is the reality of a continent which daily buries its youngest and most productive members.

Nicholas Tan revisits the burning intellectual curiosity and the technical virtuosity of the early hackers. Differentiating between hackers, crackers and phreakers, Nicholas argues that today’s genuine hackers (with no malicious intent) are under-represented in folklore and underskilled compared to their predecessors.

Why are so many prestige developments built around water features? Steve McKiernan draws upon his childhood experiences, and his love of natural wetlands, to expose the sham of these constructed waterways. The irony of filling in swampland to create building zones circling an artificial lake which is destined to become a stagnant cesspit, is well articulated in this article.

The ‘constructed realities’ of constructed wetlands is mirrored by Lawry Hills investigation of reality TV. Clearly, the real reality of these artificial situations lies in the questionable involvement made by the participants and the audience. The implications of playing fast and loose with people’s lives in unreal situations are examined here.
Zoe Trotman’s paper challenges the notion that the digital domain is a revolutionary space. Instead ‘In “his” own image’ argues the same stories are told by the same people using different tools. The images accompanying this paper represent a personal response to the status quo.

“Joe PM’ is Andrew Dunbar’s way of investigating the on-line management system of near-graduate third year management course. Students find their exploration of project management managed by Joe PM and this paper assesses the usefulness and relevance of this active teaching and learning tool.

Scott Smith turns the focus from the management of online learning to the management of the electromagnetic spectrum. The ‘Air of the Information Age’ questions the ethics of exploiting not only the earth and the water but also the sky. He argues against the idea that government and big business can collude to sell space which is a common resource and which could be used for the benefit of all.

The tragic explosion at the ESSO Longford plant in Victoria is, along with Chernoboyl are of many resonances raised by Ken Ireland’s discussion of data relating to the invisible inside a reactor or processor. Starting with the premise that most people cannot visualise three dimensional space from raw data, this paper argues the importance of such visualisation.

George Karpathakis wonders why and how people find meaning in the collecting of rocks from the Australian landscape. Having watch a team of production professional filling their pockets with pebbles, he asks do they have ‘rocks in their heads’? Concluding this is not the case the paper reviews the historic relationship of people with the landscape.

The Editors
Culture/Nature and the Botanic Garden

Sonya Sears

ABSTRACT: "Australia’s botanic gardens are places where nature and culture converge" (Australian National Botanic Gardens, 2001). This article will explore how this relationship between nature and culture developed in botanic gardens of colonial Australia and compare the functions of these institutions with the direction of botanic gardens today. The contemporary Australian botanic garden acts as a showcase for plants of Australia and the world, provides space for public recreation, fosters public education and must play an important role in conservation and contribute to horticultural and botanical research. Australian governments have historically been generous supporters of these institutions and continue to be the main funding source today. However, they demand value for money and expect additional funding to be found elsewhere, leading the botanic garden to embrace commercialism and the world of corporate sponsorship. In the process nature becomes commodified. Consequently, the balance between nature and culture in this changing economic culture will be addressed. Particular attention will be paid to Kings Park and Botanic Gardens in Perth.

Nature and Culture

The term ‘nature’ is not easily defined. Chambers offers five conceptions of nature important in the intellectual development of Western civilisation: nature as the infinite, unknowable universe; nature as the material world; nature as wilderness; nature as the natural order and nature as essence (Chambers, 1984, p. 7). These conceptions overlap with Coates’ divisions of understandings of
nature in the Western world. The two which are of interest here are nature as a physical place, a place unspoiled or unmodified by man and nature as the conceptual opposite of culture (Coates, 1998, p. 3). Chambers combines these categories under ‘nature as wilderness’, wilderness as opposed to civilisation, nature (that which is not man made) as opposed to culture (that which is man made) (Chambers, 1984, p. 7).

It can, however, be argued that nature is a cultural invention. This is not to deny the existence of the non-human world. Alexander Wilson sees nature as part of culture. For Wilson nature is a place “where human and natural economies meet” (Wilson, 1992, p. 12). He claims our experience of the world is always mediated, shaped by historical constructs like photography, industry, advertising, aesthetics, religion, tourism and education. “The whole idea of nature as something separate from human experience is a lie” (Wilson, 1992, p. 13). Rod Giblett, in his exploration of the nature of natures, identifies a death of nature which coincides with the birth of natural history. “nature as a living agent and vital organism began to die or was killed outright when nature began to be studied as dead matter or inert object” (Giblett, 2001). He locates this death in Michel Foucault’s grid of denominations. “Things and words are very strictly interwoven: nature is posited only through the grid of denominations... without such names it would remain mute and invisible” (Foucault, 1991, p. 160). So through the denominative grid of taxonomy nature became visible and was made to speak. (Giblett, 2001). Giblett says that this death of nature ironically led to the proliferation of discourses of nature. In view of this thinking, stating that botanic gardens are places where nature and culture converge may be restated - botanic gardens are places where several discourses of nature co-exist. Giblett lists several such discourses, four of which have relevance to the following discussion on botanic gardens. These include the scientific objectification of nature, the aestheticisation of nature in landscapes, the signification of nature as an object of consumption in tourism and the capitalist commodification of nature (Giblett, 2001).
The Botanic Garden - Origins

Botanic gardens have their origins in science. The two earliest botanic gardens were established in 1545 in Italy at Padua and Pisa. The plants were European natives and used for educational purposes at university medical schools. During the early years of the Renaissance there was a renewed interest in the natural world, "...the study and classification of 'nature' was an essential part of the Renaissance in Europe" (Hobhouse, 1994, p. 103). In the late sixteenth century, Bernard Palissy, a hydraulic engineer, naturalist and chemist, created a garden of 'natural secrets' which reflected his view of nature's place in the world. He thought:

the whole world of creation conformed to sublimely interlocking but mysterious laws. The variety of natural form ought, if correctly discerned, to correspond to the many faces of God. So if the right formulae of inquiry were applied, those laws (and the countenance of Divinity) could be revealed to the learned...His secret garden was a route to knowledge that was simultaneously scientific and mystical (Schama, 1995, p. 537).

According to French cultural theorist, Michel Foucault, the Renaissance was a period, or form of knowledge, where people understood the world through God.

everything (nature, people's behaviour, buildings) could be interpreted in terms of a divine code, which had to be deciphered...Foucault refers to the Renaissance as the 'age of resemblances', because the idea then was that everything resembled (echoed, or imitated) something else, and it was only through God's code that all these resemblances could be fitted together, deciphered and made to make sense (Danaher, Schirato and Webb, 2000, p. 19).
It was during this ‘age of resemblances’ that the establishment of botanic gardens began “mark(ing) a new stage in the study of plants as a botanical science” (Hobhouse, 1994, p. 108). John Prest explained that those who created botanic gardens had a desire to create the botanical totality of Eden (cited in Schama, 1995, p. 537). Schama states that the botanic garden was a way of gathering all the diversity of the natural world to better expose its underlying regularity (Schama, 1995, p. 537). In doing so, nature was controlled, was shaped to suit our own ideals and satisfy our quest for knowledge. “Eden-behind-walls was ... a way of bringing wilderness to heel by sending it to school, making it understand its kinship with the tame and the temperate...” (Schama, 1995, p. 538). Rather than just bringing wilderness to heel, some by the twentieth century, were rejoicing in the exclusion of wilderness from the botanic garden. The Oxford Botanic Garden was described by Young in 1908 as follows:

one can walk around and contemplate the plants with serenity, secure in the knowledge that the wilderness is excluded, and experience the subtle psychological nexus between the Garden Spirit and the soul of Universities and Academies - classic and sacred Groves of Thought, Learning (cited in Brown, 1999, p. 212).

Plant Collecting

Plant collecting was carried out by explorers, botanists and missionaries, not only for botanic gardens but for plant enthusiasts, those with money, who wanted exotics in their gardens. In the sixteenth and seventeenth centuries plants were reaching European gardens from Europe, Asia, Africa and America:

But the exploration of the New World ... had created a rich new topography of paradise...If these wonders of the tropics and the Orient could be shipped home, collected, named, and arranged within the confines of
the botanical garden...an exhaustive, living encyclopedia of creation could be assembled that would testify to the stupendous ingenuity of the Creator (Schama, 1995, p. 537).

Hobhouse, under the heading ‘The Professional Plant Hunters’, describes how by the end of the eighteenth century, plant collecting had become professional where trained botanists were given “specific plant hunting instructions” by botanic gardens and nurserymen (Hobhouse, 1994, p. 225). This interpretation of plant collecting history uses the term ‘hunting’ in a way that naturalises the process. Some animals instinctively hunt, grazing animals forage. Hobhouse continues this metaphor of animals instinctively feeding in the following statement. “Bodies such as the new Horticultural Society and the developing gardens at Kew sent or encouraged collectors to forage for exotics all around the world” (Hobhouse, 1994, p. 225). The reader is assured that this was for practical and scientific rather than purely ornamental interest. Other historians have viewed this ‘foraging for exotics’ as ‘ransacking’.

The first explorers had ransacked the world, bringing to Europe what ever struck their fancy—flowers, foods, minerals, odd animals, spectacular birds, the tools of the people they found, the people themselves. By the late eighteenth century governments began to convert this casual looting into a systematic effort in the service of empire. They established experimental gardens in the tropics and at home as centres for botanical studies and a source of
novelties for the gardens and hothouses of the rich

(Dunlap, 1999, p. 53).

Jane Brown sees gardens as an international currency and says that the exchange can be seen as “an exercise in diplomacy that has contributed enormously to the sum of human health and pleasure, or as a commercially motivated greedy scramble” (Brown, 1999, p. 169). Brown further points out that institutions like the Royal Horticultural Society and Kew are trying to re-write and redress the plant hunting villainry accusations made by the environmental movement. A recent article by David Dickson titled, ‘Kew turns over a new leaf’, states “at the hub of the British Empire, Kew gardens once scoured the world for plants. Now its Millennium Seed bank puts it in the vanguard of international conservation efforts” (Dickson, 2000, p. 35).

The Culture of Plant Collecting in Colonial Australia

Griffiths, in an exploration of hunting culture in colonial Australia, explains that European colonists had two concepts of hunting. They saw the indigenous Australians, the hunter/gatherer, as being dependent on nature. In imperial culture however, hunting was “an elite sporting and intellectual pursuit, class-conscious and recreational: it was a quest for sport, science and trophies” (Griffiths, 1996, p. 12). While Griffiths is talking about hunting animals, the collecting of plants can be placed within the same context. By referring to plant collectors as plant hunters, Hobhouse is drawing on the first concept of hunting as dependent upon nature. The collecting of plants from around the world however, belongs to the European hunting culture. Griffiths defines this as movement from ‘hunting’ to the ‘hunt’, “from dependence on nature to manipulation of it, from an essential economic function to an elite social one” (Griffiths, 1996, p. 13). He further states that collecting is a form of hunting. “The gathering of objects for study and display
was seen as a refined and educated form of hunting" (Griffiths, 1996, p. 9). Botanist, Sir Joseph Banks, bought his way onto the Endeavour for Captain Cook’s journey to Australia. Brown describes Banks as an economic botanist and pirate king, well connected, superbly self-confident who enjoyed horticultural empire building (Brown, 1999, p. 179). Lawrence James, in a recent history of the British Empire states that Cook and Banks were said to have “viewed their destination as a secret garden whose fruits might be harvested to Britain’s advantage” (cited in Brown, 1999, p. 179).

Australia’s European origins as a British colony means that Australian science is Eurocentric. Seddon states that the main development of science in the last 400 years has been in western Europe and thus has been influenced by European experience and social and cultural values (Seddon, 1997, p. 73). Transplant these European, in our case British, social and cultural values to Australia and one can easily see how our scientific endeavours followed the British model. Natural history, during the great expansion of the nineteenth century, was the leading edge of European understanding. The field of natural history reached prominence during the Classical age, which followed the Renaissance. This age saw the rise of scientific approaches where the world came to be understood in terms of natural order, not in terms of God’s divine plan (Danaher, Schirato and Webb, 2000, p. 19). Foucault does not believe that there is a linear progression of gaining scientific knowledge from one age to the next.

Historians want to write histories of biology in the eighteenth century; but they do not realise that biology did not exist then, and that the pattern of knowledge that has been familiar to us for one hundred and fifty years is not valid for a previous period. And that, if biology was unknown, there was a very simple reason for it: that life itself did not exist. All that existed was living beings, which were viewed through a grid of knowledge constituted by natural history (Foucault, 1991, pp. 127-128).

Foucault states that prior to the Classical age “the history of a living being was the being itself”, within the whole semantic network that
connected it to the world” but by the seventeenth century signs were not part of the things themselves but became modes of representation (Foucault, 1991, p. 129). Natural history created a language where by living things were observed, classified in terms of structure and placed within the language. Swedish naturalist Linnaeus, for example, developed the binomial system of botanical nomenclature whereby parts of a plant could be examined in terms of number, size, form, arrangement which allowed the plant to be classified and named within a botanical language. “…one and the same plant, will be described in the same way, in so far as their structure governs their passage from representation into language” (Foucault, 1991, p. 136).

The Classical age gives history a quite different meaning: that of undertaking a meticulous examination of things themselves for the first time, and then of transcribing what it has gathered in smooth, neutralised, and faithful words (Foucault, 1991, p. 131).

This new system of gathering detail and forming knowledge was represented at the institutional level by botanic gardens, natural history museums, collections and herbariums. According to Foucault, their development did not represent a new quest for knowledge but a new way of making history, “a new way of connecting things both to the eye and to discourse”(Foucault, 1991, p. 131). During the Renaissance exotic plants and animals were ‘spectacle’ but during the Classical period such material became ‘museum’ - arranged and labelled, named and thus placed within the discourse of natural history.

Creatures present themselves one beside the other, their surfaces visible, grouped according to their common features, and thus already virtually analysed, and bearers of nothing but their own names (Foucault, 1991, p. 131).

Jane Goodall, in her recent essay ‘the nemesis of natural history’, identifies two faces to this area of science: the innocent face of a popular hobby based on a ‘natural’ curiosity about living things and “an imperialist project deeply invested with the hierarchical organisation of difference” (Goodall, 1999, p.111)
The culture of natural history…rose together with industrialisation and colonisation, echoing their languages and providing a set of supposedly objective principles to stand as scientific guarantors of the logics through which both were justified (Goodall, 1999, p.111).

Dunlap explores natural history and the construction of nature in the settler nations of the United States, Canada, Australia and New Zealand. The insights Dunlap provides directly informs the development of some of Australia’s early botanic gardens. Dunlap describes how settlers were able to take their local knowledge and place it into a comprehensive system which was part of European high culture:

Collecting specimens and taking measurements, individual settlers could form connections to the metropolis and contribute to the progress of their society, and the societies, museums, and expeditions they supported were visible evidence of the maturity of their own societies (Dunlap, 1999, p. 21).

Dunlap describes how in countries such as Australia, political loyalties and small populations meant England remained the cultural centre. Natural History Societies were established by Royal Governors. Specimens were sent back to England. Kew Gardens was one of the main receivers of Australian plant material of taxonomic significance. Sending of specimens back ‘home’ to a single collection “was a visible and material expression of the owner nation’s knowledge” (Goodall, 1999, p. 113). Entry into scientific societies in England was striven for and viewed as a reward. The names of some of Australia’s botanic gardens also reflect this reverence to England. The Royal Botanic Gardens, Sydney was not granted the ‘Royal’ until 1959. Perth Park became Kings Park in 1901 in recognition of King Edward VII taking the throne.

The botanic garden in Sydney played a major role in agricultural development during the 1820s-30s. It exchanged seeds of economic value to the new colony, food crops, for native plant specimens
which held novelty value in Europe. Endersby, in his article on botanical barter in Sydney, reveals the rivalry that developed between collectors. The rivalry between Fraser, collecting for the local Macquarie government and Cunningham, sent by Banks to collect for Kew, was significant. Endersby says the rivalry was not surprising ‘given the prestige that accrued to whoever could supply Australian plants’ (Endersby, 2000, p. 319).

Endersby sees plant barter as an overlooked aspect of the creation of these botanic gardens:

its foundation depended on a series of unplanned relationships - between British savants, Australian governors, commercial plant collectors and ambitious young botanists - and these were all mediated by various kinds of exchange that involved plants. Plants could be traded for money, patronage or social and scientific prestige (Endersby, 2000, p. 314).

Inventing Nature

By the time the early Australian botanic gardens were being developed, the model for such institutions was well established, legitimised by science and cloaked in European high culture. It was also the European model of landscape aesthetics that was adopted and recreated in an Australian setting. Chambers explains how the first European settlers in Australia saw “the land through the cultural and socio-economic lenses of their European experience...clearly the land seemed a chaotic and hostile wilderness upon which civilised man would have to impose order, value and meaning” (Chambers, 1985, p.56). The Royal Botanic Gardens at Kew, established in the eighteenth century, were unique in that they “combined the function of cultivating a wide variety of plants with an aesthetically pleasing landscape”, to which “highly manicured lawns” contributed (Dickson, 2000, p. 35). The botanic gardens in Sydney, Melbourne and Adelaide followed suite and are ‘transformationist’, Seddon’s classification for a landscape which has been moulded by the hand of man, “the natural scene has been remade and the hand of man is everywhere evident” (Seddon, 1970, p.13). Essentially, nature being made over into culture.
The Royal Botanic Gardens in Melbourne were established in 1846 and only about ten percent of their collection is native. Before development the site was "an uninspiring mixture of rocky outcrops and swampy marshland" (Royal Botanic Gardens Melbourne, 2000). It was William Guilfoyle, made director in 1873, who "set about creating the Gardens', world famous for its 'picturesque' landscape style. Guilfoyle sculptured sweeping lawns, meandering paths and glittering lakes, creating a series of vistas offering a surprise around every corner" (Royal Botanic Gardens Melbourne, 2000). The Royal Botanic Gardens, Sydney, founded in 1816, is the oldest of Australia’s scientific institutions. During the later years of the 1800s most of the remnant natural vegetation was removed and the gardens planted as parkland. However, it is at the Adelaide Botanic Gardens, established in 1855, that the European influence is perhaps most evident. George Francis, the first superintendent was influenced by the Royal Botanic Gardens at Kew and by Versailles in France, and by German and Dutch design styles. Nineteenth century travellers were impressed with the fact that Australia had created landscapes which replicated those at home. They were "impressed by the speed at which the native landscape had been refashioned" (Russell, 2000, p.14). J.H. Maiden, Director of the Sydney Botanic Gardens wrote in 1903:

visitors must never lose sight of the fact that the greater portion of what is now the Botanic Gardens was originally a barren, rocky, sandy place...It is the hand of man that has converted this barren waste into smiling gardens (cited in Russell, 2000, p.14).

Recreation versus Science

The Australian National Botanic Gardens web site asks "What is a botanic gardens?" The site gives several definitions. The most comprehensive is as follows:

- A reasonable degree of permanence
- An underlying scientific basis for the collections
Proper documentation of the collections, including wild origin
- Monitoring of the plants in the collection
- Adequate labelling of plants
- Open to the public
- Communication of information to other gardens, institutions and the public
- Exchange of seed or other materials with other botanic gardens, arboreta or research institutions
- Undertaking of scientific or technical research on plants in the collections
- Maintenance of research programs in plant taxonomy in associated herbaria

IUCN Botanic Gardens Conservation Secretariat, Kew, Richmond, United Kingdom (1989)
(cited in Australian National Botanic Gardens, 2001)

Science is ostensibly constructed as the underlying agenda for botanic gardens.

By the late nineteenth century, botanical gardens were a well established part of the urban environment. More than simply parks, they had a serious purpose that was recognised by most people: to accumulate botanical and horticultural knowledge and disseminate it (Russell, 2000, p. 11).

Australia’s colonies were recognised for the establishment of botanic gardens which served both science and recreation, “a place where science shared equal billing with landscape” (Russell, 2000, p. 11).

There was not always an easy relationship between the two. The colonial botanist Cunningham, director of the gardens in Sydney in 1837, became annoyed at the landscaping works being carried out which he felt had no relevance to science. “For the government, providing leisure for the respectable was a useful way of justifying the cost of the garden” (Endersby, 2000, p.330). A British novelist who visited Australia in the 1870s acknowledged that Melbourne’s
botanic gardens, then under the directorship of Mueller, had significant scientific value but claimed they lacked 'charm', "a perfect paradise of science for those who are given to botany rather than beauty" (cited in Russell, 2000, p13). Mueller was replaced by Guilfoyle who transformed the gardens with extensive landscaping. Richard Twopenny wrote a decade later that the gardens "have no great scientific pretensions, as their name would imply, but are merely pleasure grounds" (cited in Russell, 2000, p13). This tension between science and recreation exists today and most Australian botanic gardens seek to find a balance between the two. In recent times recreation and entertainment, in varied forms, seem to be gathering momentum as gardens increasingly market their services with nature as the backdrop.

**Kings Park and Botanic Garden - a park for the people**

Kings Park differs quite markedly from the Australian botanic gardens discussed above as it was originally set aside for the recreation of the people. Science did not play a part until much later. A significant portion of the park is remnant bushland. The Science Division at Kings Park carries out vital research in conservation biology and genetics, restoration ecology, germplasm conservation and propagation science. There is a botanic garden within the park but this wasn’t established until 1965 and 90 percent of its collection is native. The focus of the garden is to promote horticulture, conservation and understanding of Western Australian and other flora (Garvey, Gilmour and Cornish, 1995, p. 18).

The whole of Kings Park is now considered to be a botanic garden because over 2000 Western Australian species grow within the park. The area of some 400 hectares was established as a reserve in 1895. The West Australian Premier, John Forest, during a tree planting ceremony, made it clear that the land was reserved for public purposes which included recreation and enjoyment (cited in Garvey, Gilmour and Cornish, 1995, p. 8). The park has survived a rifle range, grazing livestock, logging of jarrah, prescribed burns and has been threatened on several other fronts over the years. It is not a pristine wilderness. It is rich in cultural history as the site for several memorial gardens and has areas of landscaped vistas,
grassed parkland, playgrounds, picnic areas, roads, tree lined avenues and cycle paths. “The pageant spreads from gardens tended and controlled, to the extensive bushland that keeps its wild spirit” (Garvey, Gilmour and Cornish, 1995, p. 12). A significant portion of the park however remains bushland and concerted efforts have been made to restore this ecological site to overcome the damage done during its European history. Its central location in the metropolis makes the area unique and one of the state’s major tourist attractions. “While bushland and open parkland remain so accessible, there is hope that we will remain in touch with nature” (Garvey, Gilmour and Cornish, 1995, p. 4).

Commercial Realities

While Kings Park may differ in its earlier origins, landscape and flora content from the more traditional gardens discussed, the agenda for botanic gardens today is broadly the same - research, conservation and public education. This all costs money. Where does this leave recreation and the general public? It is very much in the foreground as botanic gardens have become increasingly customer/visitor focussed, particularly in the last decade. Such gardens are tourist attractions and must aim to maximise their position in the tourist market. Kings Park aims to be world class in all its programs: visitor services, cultural heritage, living collections, corporate development, and plant science. To achieve this standard there needs to be adequate resources. While government funding is still the backbone of its existence, Kings Park has had to become increasingly more financially independent. This has lead to some major changes in to the use, image and function of the traditional botanic garden.

Stephen Hopper, Director of Kings Park, stated in 1992 the agency’s vision. The park:

will foster recreational use, education programs and culturally significant events. It will seek to become a window on the natural world for an increasingly urbanised society, communicating
the importance of plant conservation and the fascination and enjoyment of plants to citizens and visitors alike. Its use as a central resource for horticultural pursuits, for urban bushland management, for botanical research, and for the integration of the arts and natural sciences is likely to grow' (Kings Park and Botanic Garden Annual Report, 1997, p.8).

In 1993 Kings Park embarked on a new marketing strategy. 303 Advertising Pty Ltd, strategic marketing consultants, were employed to raise the public’s awareness of the services provided by Kings Park, to assist in developing a marketing plan and to seek corporate sponsorship. As a result the agency launched a new corporate identity and logo in 1994. In conjunction with this change, the agency underwent a restructure into four divisions, focussing on service delivery: visitor services and cultural heritage; living collections and natural heritage; science and education; and corporate services. That year the A$8 million restaurant complex was completed.

By 1996 -1997 several other new initiatives had been introduced. An Aboriginal arts retail outlet was established. The wildflower festival had been very successful. Corporate sponsorship was proving fruitful with funding secured from major organisations such as TVW 7 and West Australian Newspapers. Fee paying arts events in the form of theatre and concerts were introduced. Tourism continued to be high on the agenda with consultants, Tourism Co-ordinates, preparing a report that indicated revenue generating opportunities. Under ‘Corporate Performance’ the annual report for this financial year states:

work also began on improving the strategic economic development and marketing focus of the Kings Park. An overall approach was taken with particular emphasis being placed on improving revenue generation throughout the Park in order to resource various activities and operations (Kings Park and Botanic Garden Annual Report, 1997, p. 24).
The 1998 President’s report acknowledged the rapidly changing business climate within which the Park now operates. This led to the major changes made “to the way in which the agency does business” (Kings Park and Botanic Garden Annual Report, 1998, p. 6). Again, corporate sponsorships and partnerships were growing as was the popularity of theatre and concerts in the Park. “This type of usage of Kings Park represents a low risk approach to revenue raising as well as marketing of Kings Park to non-traditional visitors” (Kings Park and Botanic Garden Annual Report, 1998, p. 15). The Park was ranked seventh in a list of Australia’s top tourist destinations by a popular commercial television holiday programme. The Park also hosted the World Triathlon Cycling event. The following year the aim to enhance visitor experience through commercial events was now starting to pay off. The outdoor ‘Sunset Cinema’ began and attracted 30 000 patrons. “Patrons attending events increased in 1998-99, resulting in increased financial returns, positive public feedback and significant media profile” (Kings Park and Botanic Garden Annual Report, 1999, p. 11).

The Kings Park Board was disbanded in 1999 after 104 years. It was replaced with the Botanic Gardens and Parks Authority. Importantly, this change in legislation allows for the establishment of a foundation to assist in fund raising. The authority will also be responsible for the management of other designated land, Bold Park being the first such area. Functions of the Authority revolve around several areas: conservation, management, education and research pertaining to the natural environment, biological diversity and the collections; conservation, enhancement and promotion of the Aboriginal, colonial and contemporary cultural heritage of the park; provision, improvement and promotion of recreational and tourism services and facilities (Botanic Gardens and Parks Authority Act, 1998, p. 7). These functions fit with the definition of a botanic garden outlined above and move beyond this scientific basis into areas of cultural heritage, recreation and tourism.

This overview of directional change undertaken by Kings Park over the last decade reveals a customer service orientated, corporate organisation where commercialism plays a major role. Nature has become a commodity. One can argue correctly that nature has
always been a commodity in the botanic garden, particularly during the colonial era when plant barter and trade was at its height. This recent trend is more to do with selling the idea of nature, selling the 'nature experience'. Sponsors want something in return for their dollar and the challenge is not to compromise the essence of the park in the process. The ongoing and underlying roles of a botanic garden in the form of conservation, research and education are still carried out however, and hopefully at a greater level because of the increased revenue and profile provided by these new initiatives. At Kings Park, science receives 25 percent of the funding while tourist/visitor enjoyment receives 75 percent. There has also been a significant shift in understanding towards the natural bushland at the park and moves are underway to make the bushland part of the visitor experience (Webb, 2001). The Royal Botanic Gardens, Melbourne also market themselves as being much more than just a botanic garden. A significant portion of their Gardens Guide pamphlet sells the gardens as a location for your special event: "the unsurpassed beauty of the Royal Botanic Gardens provides an idyllic backdrop for your private or corporate function". The Terrace Receptions where "fine food, wine and Melbourne’s most spectacular views come together": Gardens House is an exclusive venue for weddings, celebrations, conferences, meetings, dinners, cocktail parties and product launches (Royal Botanic Gardens Melbourne, n.d). This is commodification of nature in the botanic garden at its most obvious.

Conclusion
Botanic gardens have always been places where nature and culture converge. Originally, this was through ‘man’s’ quest for knowledge of natural things, through the culture of collecting, through science and research informed through the language and culture of natural history and imbued with western European cultural and social values. The early botanic gardens in Australia were not only influenced by European scientific circles and institutions but quoted European culture through inventing landscapes that were understood to be aesthetically pleasing, according to a European perspective. These landscapes were created for the recreation of the
people, 'pleasure grounds.' In the contemporary Australian botanic garden, nature converges with culture in many other ways: in the form of tourism—thus investing in a global culture; in the form of entertainment through the arts (theatre, film, concerts) and sporting events; through popular horticultural events like festivals and gardening fair days; through fine dining, gift shops and as venues for a host of private and corporate functions. The image is corporate, the marketing is aggressive, the corporate sponsorship dollar is vital and science now shares equal billing, not only with landscape but with the ever enhanced visitor experience, which may have little to do with botany.

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What are the key elements when designing a functional and user friendly computer interface?

Ryszard Zabilski

ABSTRACT: As more computer software is released for use by the general public, the emphasis is being placed heavily on the way the computer and the user interact with one another. The days of heavily code-driven computer programs from the 80's are over. The new millennium is showing the way for new, more intuitive and user-friendly software. This article attempts to deal with the ins and outs of interface design for the next decade and beyond.

The Oxford English Dictionary defines 'interface' as:

1. A surface separating two portions of matter or space and forming their common boundary.
2. A place or 'region', or a piece of equipment, where interaction occurs between two systems, organizations or persons.

In the context of computer interfaces, the first definition is perceived as negative, because it suggests a boundary between the machine and the user.

The second includes a 'region' where interaction occurs, and is thus a better definition of what an interface between the computer and its user should be.
The User

With today's rapid increase in computer technology, the steady move away from traditional, text-based interface styles such as that used in DOS, and an increasing popularity of interfaces which are beginning to resemble the everyday world more and more, a more accepted definition of an interface would probably be close to "a collection of objects, tools, languages and displays, which lie between the people and the machines they intend to use. (Lansdale 1994, p. 14)

Interfaces have evolved rapidly over the past decade. So much so, that a whole new era of design and interaction standards has begun, and is growing at an almost geometric rate.

The common computer is now a lot more than just a collection of characters on a screen. It has become a tool, whose powers are only exceeded by its mystery. People are approaching computers with a totally new and original need to interact and learn. This is mainly due to the increased power of the average home computer, and by its ever-growing ease of use made possible by icon and metaphor-driven interfaces. These are interfaces, which allow the user to view the computer as if it were a 'virtual' extension of their everyday life. These types of interfaces are therefore referred to as virtual 'world' interfaces. Whereas a virtual world interface would refer to a world that is near, or similar to the real world, a virtual world interface refers to an interface that mimics the real world.

Virtual world interfaces allow people to identify with the computer through a representation of an interface they are familiar with. A well designed real world interface is one, which includes the clearest representations, or metaphors, of the physical interface, and arranges them in such a way that the benefits of having the interface transplanted onto a computer become obvious, rather than a novelty. The cleverness of such an interface lies in being able to successfully improve upon its functionality through the use of a computer, while still maintaining an aesthetic and familiar organization and structure of the functions on offer.

Lansdale (1994, p.34) suggests that humans select only the information that is relevant to the current task, by using prior
knowledge to understand and predict events.

The notion underlies the use of prediction in maintaining interface dialogues. This refers to the simplified representation of the interface that strips away the complexity of the system to leave just the main concepts. Effective metaphors are ones, which achieve a close match between the interface element and the everyday task it is trying to represent.

Norman (1990, p.68) writes; when things make sense, they correspond to knowledge we already have, so the new material can be understood, interpreted, and integrated with previously acquired material.

Humans sometimes fear what they don’t understand. Where they don't understand, they may assume. Interfaces should therefore be designed in a way, which reduces the cognitive load on the user, allowing them to recognize and interact with screen elements, and provide them with tools to customize the interface to suit their individual needs.

Mandel (1997, p.10) believes that people learn how to act by interacting with the things around them. When confronted with certain things they don't understand, people tend to relate the unknown entity to things they do understand. They then react to the unknown in a manner consistent with the way they think that type of object behaves.

Mandel went on to say, that products should be designed to meet user needs based on experiences and expectations; in different social, cultural and business environments; rather than on the product designer's viewpoint.

Making sure objects work like they do in the real world rather than like inside a computer, gives users a feeling of satisfaction, control, and comfortable interaction.

Mandel’s view is that users should be able to customize the interface to their own needs, which shouldn't in any way, feel that they can alter the proper functioning of the program.
Users should directly manipulate things and objects on a screen rather than having to learn indirect methods such as typing commands, or selecting from menus. While both styles should be present, the interface should be able to optimize itself towards the users' most natural interaction style. Users should feel like the interface isn't even there.

It's human nature to feel frustrated when people want to go somewhere but they can't get there quickly. The interface should therefore help the user feel in control of as many tasks and events as possible, without cluttering the work area, or increasing the users' cognitive load. A well-designed interface can comfort, and even entertain users while the computer system is completing a process.

**Intuitive Structure**

Modern user interfaces not only need to emphasize good screen design, ease of use, and user friendliness, they must also:

- Reduce the number of keystrokes (none?) to improve user performance, often by offering macros and procedure files. A macro is a file with a set of instructions recorded into it. Such files are common in interfaces, which rely on repetition of keystrokes, such as programming languages, word processors, and spreadsheet programs.

- Anticipate the user's next move. The more times a user performs a combination of keystrokes to perform a function, the more the system should 'learn' that combination, and offer simpler ways of performing it in the future.

- Provide meaningful error messages that help solve the problem, rather than just describe the mistake.

- Emulate popular software packages which provide the user with a sense of background knowledge on how the software is operated before they even had a chance to press a button.

- Allow users to customize the interface to suit the needs of the
user, not just the needs of the designer.

- Offer shortcuts for advanced users. These should be integrated into the interface in such a way that they are almost invisible until the user needs to look for them. These too must comply to set standards found in popular packages.

- Provide appropriate levels of feedback to help explain program progress at any time during operation. The user should always be informed of the state of software and hardware; whether it is waiting, processing, installing, or whether it has simply locked up.

When a user sits down at the computer, they expect the program to work with them, to be synchronized with the operator. The program should become a seamless extension of how the user is thinking, and should work in the same way the user does. Users should not need to struggle with the program's features. (Powell 1990, p. 7)

Mandel (1997, p.178) made the comment that any well-designed software user-interface should reinforce the design principles that reduce the user's memory load. Graphical interfaces have the advantage of providing visual cues and information that use the computer's storage and retrieval strengths to ease the cognitive load on human memory.

Preece (1993, p.24) states that, when designing a screen display, it is important that the information presented on the screen conforms to the five rules of proper design. The interface should therefore be:

- Legible
  The text doesn't flicker and is easy to read at a glance.

- Distinguishable
  The objects are clearly separated from the background.

- Comprehensible
  Text and information is easy to understand.

- Uncluttered
  Information is presented with the minimum amount of
Meaningfully Structured
Information is easy to read and follows general patterns of proper organization.

Preece also goes on to say that a well-designed computer system should be one which reduces the number of errors the user can make by simply not allowing the erroneous action to be performed in the first place.

"It (the interface) should use as many meaningful analogies as possible to allow the user to make real world associations with each action and process they perform. It should allow users to actively explore the system, and teach themselves on the fly, rather than by making them read through endless pages of text before getting any work done." (Preece 1993, p.29)

Cognitive Psychology
Cognitive psychology focuses on understanding and researching how people learn, comprehend, and remember information. (Mandel 1997, p.112)

Before any modern interface can be classified as 'user friendly', it must first be designed, and evaluated according to the cognitive 'load' it will place on the user. This refers to the memory strain that the user undergoes every time they perform a particular action. If the action is almost automatic, the cognitive load is minimal. If the action requires a substantial amount of prior thinking, or evaluating, then the cognitive load is increased, thus the particular action, or process needs to be redesigned, in order to decrease the load.

Donald Norman, in his book *The Psychology of Everyday Things*, states that interfaces must not be designed as a form of conspiracy against memory.

They should not force the user to remember codes for the sake of machinery. The interface should be created for use by the user, not
by the machine.

Mandel (1997, Pp.63-79) developed a Table of Principles, which provides certain design guidelines for software developers to help reduce the cognitive load placed on the user by the interface. These are the key components.

**Promote Use of Short Term Memory**
Interfaces should be designed in a way that constantly stimulates the user's short-term memory. Users should not be forced to rely on external help when remembering tasks etc.

**Rely on Recognition Not Recall**
It's easier to browse a list of items than it is to try and remember the one you want. People generally don't know what they want until they see it. The interface should stimulate the users' short-term memory for knowing where to click to see a list of commands, and not to force them to name the command they want from memory.

**Provide Visual Cues**
Let the user know what is happening at a glance. The dials on a car dashboard always maintain up to date visual information so the driver knows what they are doing at all times. A computer interface should provide similar visual cues so users know what the computer is doing, and can react accordingly at any point in time.

**Provide Defaults, Undo and Redo.**
Users should be allowed to explore options and possibilities and be able to go back if their exploration is futile. A friendly interface encourages users to explore as much as they like without fear of negative consequences. They should also be provided with a default, or built-in procedure of anything they are unsure of in the first place.

Mandel also states, that things that look like each other on the screen should behave in a similar manner. Icons that look like folders should behave like folders.

Semantics among interface elements should act as they are expected to act, and not how the designers want them to act. (1997, p.182)
Constraints and Affordances

Norman points out that all interfaces, be they computer, or day to day interactions, need to have in place certain types of obvious constraints and affordances.

He states that "Affordances suggest the range of possibilities available, constraints limit the number of alternatives, or possible functions". The thoughtful use of constraints and affordances designed into a user interface, can make it more intuitive, and reduce the amount of learning the user has to undertake to operate even the most complex tasks. (1990, p.82)

Norman states that there are four different types of constraints, which can be applied to a graphical user interface:

Physical
Physical limitations constrain possible operations. The value of physical constraints is that they rely upon properties of the physical world for their operation. With the proper use of physical constraints, there should be only a limited number of possible actions. Physical Constraints are made more effective and useful if they are easy to see and interpret, for then the set of actions is restricted before anything has been done.

Semantic
These constraints rely on our prior knowledge of the situation and of the world. There is only one meaningful action that can be performed on a button, and that is to press it for example.

Cultural
Some constraints rely upon accepted cultural conventions even if they do not affect the physical or semantic conventions. The English language has to be read from left to right, for example. Cultural issues are at the root of many of the problems we have with new machines. There are as yet no truly accepted conventions or customs for dealing with them, since cultural norms vary across different human groups.

Logical
Natural mappings work by providing logical constraints. There are
no physical or cultural principles here, rather there is the spatial or functional layout of components and the things that they affect, or are affected by. If two indicators reflect the state of two different parts of the system, the location and operation of indicators should have a natural relationship to the spatial or functional layout of the system. Logically when pressing a key on the keyboard, the response will generate the same key to be fed back to the user as output onto the screen.

If a dialogue box appears on the screen with only one button available to close it, the natural response would be to press that button, since it is the only one that is not constrained by the system, and by the interface. It also makes it clear which button needs to be pressed. (Norman 1990, p.84)

**Direct Manipulation Interfaces**

These are interfaces which invite the user to participate in an interface dialogue that mimics the actions required to perform a task which involves the manipulation of physical entities. There is a strong relationship between object-oriented systems and direct manipulation. The power of the object-oriented metaphor is realized most strongly when objects can be manipulated as tangible artifacts. Copying files by dragging and dropping mimics the action to be performed operationally.

Direct manipulation by its very nature requires a close mapping between existing knowledge and the interface skill. This might restrict interface design to tasks that users already do, and prevent the design of new tasks. Users may restrict their use of interfaces to highly familiar routines. (Lansdale 1994, p.45)

Shneiderman (1998, p.204) points out certain problems associated with interfaces which use direct on-screen manipulation as their primary form of interaction. He states that the visual representation may sometimes be misleading in that users may grasp the analogical representation rapidly, but then may draw incorrect conclusions about permissible actions. Users may over, or underestimate the functions and implied depth of the computer-based analogy.

Shneiderman assumes that users will take the analogy and metaphor
of an on-screen element too literally, and will expect unreasonable features from it. These features may be possible in real life, but are not available, or possible on screen.

He does, however, limit this assumption to amateur and first-time users who have no indirect manipulation computer skills, or who have not interacted with a computer-based interface before.

Alan Cooper, in his book *About Face, The Essentials of User Interface Design*, makes the point that: “There is no ‘good’ interface design just like there is no ‘good’ furniture arrangement. The viability of an interface design can be judged only within the context of its intended use.” The driving force behind the decision as to whether or not a feature should be included in a product should be that the users goals are met.

A good design is one that makes the user more effective. It allows them to achieve their goals quicker, easier, and more productively, without making them feel or look stupid in the process. It empowers the user, and gives them confidence.

Preece (1993, p.23) said that when people interact with a computer system, they are primarily interacting with information. Their objective in using the machine is to carry out a task in which information is accessed, manipulated or created. The computer and peripheral devices are the means through which these tasks are achieved. To this end, human computer interaction is essentially cognitive. It involves the processing of information in the mind.

The use of analogies and metaphors when designing a user interface is a crude and mostly unreliable method of communicating the human message with an inferiorly built machine.

We structure our diverse language to suit the primitive dialogue of a computer, in an attempt to interact our thoughts and ideas more realistically, through an artificial medium. Interfaces are still designed with the view that the computer is in charge, whereas with today’s technology, exactly the opposite is possible. The user is the one who makes the computer do what he wishes, thus the interface should allow the user to communicate with the machine through the user’s preferred dialogue, and not through one which is more convenient for the computer to process.
The Future

Future computer software will become more intuitive to the users' needs. Programs will learn most frequent keystrokes and will conform to the users' most natural style of work. Dialogue boxes will become a thing of the past. Repetitive questions which are answered in the same manner each time, will be learnt by the program and will evolve into being more in tune with what the user wants to do, rather than what the computer sees as being the next question to ask due to its inability to think for itself.

One possible direction computer hardware may take in the future will be to move away from the vertical monitor approach, and instead evolve into having the monitor flat on the table, so as to make redundant the use of a mouse as the main pointing device. (Cooper 1995, p.198)

As flat screen technology becomes cheaper and more practical, monitors will act not only as display units, but also as direct manipulation parts of the interface, with a stylus becoming the most efficient, accurate, and natural method of manipulating information on a screen. The keyboard may become integrated as part of the monitor, or become attached to the base of the monitor, thus making the unit one solid entity, with the processor and drives connected underneath, offering a comfortable footprint in much the same way a laptop computer does today. Computers would, in essence, migrate down to being not much more than common laptops, with a silk-screen, LCD monitor, thus mimicking the practicality and quick on screen manipulation of a modern day Personal Digital Assistant (PDA).

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Zero to hero:  
Men behaving badly in Japan  

Donell Holloway  

ABSTRACT: Zero to hero is an expression used by a group of Western women teaching English in provincial Japan, to describe many of their male colleagues who, upon arriving in Japan, undergo a rise in popularity and desirability finding plenty of opportunities to date Japanese women. However, as reported by the Western women in this study, many of the men behave in exploitative ways reminiscent of colonial attitudes and times. The Western women, on the other hand, find themselves left out in the cold with little opportunity to establish romantic relationships in Japan. These women describe their experiences and observations and reflect on the divergent dating experiences of Western men and Western women living in Japan.

Full Text:  
The term zero-to-hero has been coined by a group of Western women teaching English in provincial Japan to describe many of their male counterparts who, upon arrival in Japan, find themselves highly sought after by Japanese women as prospective partners. Zero-to-heroes appear to adopt arrogant and superior attitudes, behaving in ways that their women colleagues find unacceptable within their own cultural mores. These exhibited behaviours range from a general air of arrogance towards local people and women colleagues to shameful and disrespectful behaviours towards women, especially the Japanese women they socialise with. Western women's social appeal in the local heterosexual community, on the other hand, is in direct contrast to their male equivalents. A greater
social distance exists between Japanese males and Western females, who report finding little genuine opportunity to date local males.

This paper is based on ethnographic field research carried out over a three-month period in 2000 in a provincial city in Japan. It investigates the racial and gender ideologies that pattern relationships between Western and Japanese adults living in Japan, focussing on the unique perspective of Western women living and working in Japan. While living in Japan, these Western women are perceived as the exotic Other within the “transnational borderlands” (Wilson & Dissanayake, 1996, pg. 1) of the global industry of English language education. As the exotic Other, existing within local junctions of race and gender, their social appeal contrasts greatly from that of Asian women, who constitute the exotic Other in many neo-colonial borderlands. These Western women generally find themselves remote from intimate heterosexual alliances and therefore can be viewed as tangential observers of cross-cultural social interaction. However, in their role as English language teachers these women are well informed about Japanese and Western opinions regarding interracial gender issues. They have regular informal conversations with many Japanese men and women within teaching hours. They also participate in an exhaustive round of social get togethers with colleagues and students outside the English language school.

This essay will explore and analyse racial and gender relationships observed at the conjunction of the English teaching community within provincial Japan. I will show that many Western men continue to subjugate and maltreat Japanese women in a manner echoing neo-colonial attitudes and behaviours. I will argue that Western women are distanced from Japanese males as a result of local patriarchal reactions to gender stereotypes of the Western woman as more assertive and proactive than her Japanese counterpart and cultural differences in relation to romance and dating. I will also argue that Japanese attitudes and desires towards interracial gender issues are independent of Western neo-colonial ideas and judgments.

The paper is shaped by postmodern understandings of a new world space where cultural products and national images are becoming increasingly globalised, while at the same time more localised and
“fragmented into contestatory enclaves of difference, coalition and resistance” (Wilson & Dissanayake, 1996, pg 1). At the local level this new world space presents alternatives and challenges to the singularity of West-East domination. It is not intended to reiterate the notion of neo-colonial ascendancy or judgements regarding race and gender, however, reflections made by participants in the study will sometimes reflect pre existing cultural attitudes, more specifically pre existing notions of race, femininity and feminism. The aim is to give an account of the local; a specific transnational borderland (Wilson & Dissanayake, 1996, pg. 1) where intersections of race and gender exist. Parts of the findings can be explained in terms of neo-colonial attitudes while others, such as Japanese women’s tendency to seek out Western men, is independent of neo-colonial notions of gender dominance and subservience (Kelsky, 1994).

Locating the local/global borderland
This study is located in a transnational borderland created by the global business of English language education. English language ability within the Japanese community holds economic and cultural significance and appeal. As the language of the globalised economy, the ability to speak English is a required skill for career advancement. It is also seen as a sign of intellectual and cultural sophistication. English is a compulsory subject in Japanese high schools and will soon be introduced as a required subject into primary schools nationwide. It is still taught in most schools as an intellectual exercise, within which vocabulary, grammar and translation of written texts are emphasised. This emphasis has been quite sufficient for previous foreign language transactions involving Japan, as translations were needed only for letters and documents. However, as new information technologies compress time and distance in transnational communications, and greater international trade interdependency takes place, more personalized face-to-face English language communication is required. As a result, there is a greater emphasis on learning spoken English with many thousands of Westerners working in Japanese school programs or for private language schools (Abramson, 1993, pg. 154). Most private language schools are part of large Japanese profit making corporations, some of which are now multinational institutions and represented in other
Asian countries. The growth of private language schools has also moved from major cities into provincial and rural areas.

The ethnographic field research on which this paper is based was carried out in a small city in provincial Japan. The city has about 130 native English speakers, most of whom are employed as language teachers (City Council, 2000). The research involved living and socializing with a group of native English speakers for a period of three months. The first two months of the study were designed for immersion and observation of the expatriates' lifestyle. Unstructured interviews with 12 of the participants took place over the concluding month of the research period.

The participants involved in the study ranged in age from 24 to 43 years and came from countries such as Australia, US, UK, New Zealand and Canada. This group of expatriates was employed in private language schools to teach conversational, business, travel and children's English lessons. All the teachers involved in this study hold the minimum three year degree required for most teaching jobs in Japan and most have additional qualifications like Honours, Masters or TEFL (Teaching English as a Foreign Language) certificates. Most came to teach in Japan for personal, or career, sea-change reasons. Exceptions to this are established couples who are working in Japan in order to save money to establish a financial foothold when they return home and recent graduates wishing to travel before settling into structured careers.

East meets west: Madame Butterfly to Yellow Cab

Historically, Western men of leisure have travelled the world in search of adventure, and exotic images of foreign lands have filtered through to western literature based on their experiences; operas, plays and novels have been set in such locations. One of the last countries to become open to the West was Japan, in 1854. Japan's exoticness became highly fashionable, influencing western literature, fashion, and design. Japan was viewed as a land of aesthetic sensibilities and inhabited by charming, graceful and compliant women. Puccini's Madame Butterfly (1904), who suffered great loss at the hands of her Western lover, exemplifies the notion of Western
domination, colonialism and the sexual subservience of the Japanese woman.

These western images and impressions of Japanese women have persisted throughout the last century and still exist today. Japan is still viewed by some as a Western man’s paradise. A generation ago, author of Bachelors’ Japan,(1967) Boye De Mente, viewed Japanese women as functional, ornamental possessions whose role was to reflect and amplify his own sense of self worth. He also described the attributes that made Japanese women attractive to Western men:

The Japanese girl is about the closest nature has come to producing the type of imaginary women the average American male has on a pedestal. She has an innocent-appearing, baby-faced cuteness that is particularly appealing to Western men (because the average Western woman is far from cute in this way and it suggests youth, innocence, etc.). She is small-bodied and delicate-appearing, like a young Caucasian girl of fourteen or fifteen years of age...and therefore has the appearance of “forbidden fruit” that is, however, accessible! (DeMente, 1967, pg. 120)

Apart from the worrying allusion to paedophilia, this construal placed the Western woman in direct opposition to the Japanese woman; a cute, innocent and diminutive Japanese woman vis a vis a far-from-cute and more generously proportioned Western woman. A more contemporary and down-to-earth example was recently posted on a bulletin board devoted to Japanese/foreign relationships.

Japanese girls are hands down the most beautiful, fine, feminine girls in the world. The US is only good for one thing-making money. The girls here are fat, bitchy, and a waste of time (My Nippon, 2001).

This mindset, in which the world is conceptualised by noting differences between the self and other, familiar and foreign, is a process which creates and consolidates western discourse about the foreign. This process has been identified and defined by Edward Said (1980) as Orientalism. A discourse of difference between East and West, having been constructed and disseminated by Westerners,
tends to create a dialogue of authority and dominance of the Orient (Said cited in O'Shaughnessy, 1999, pg. 13). Japanese masculinity is also differentiated from western notions of masculinity. In contemporary Japan some Westerners still tend to view the Japanese male as somewhat feminine in appearance. Today, Japanese youth who shave body hair or wear clothes and accessories featuring cute animal characters are often perceived as effeminate (Rachel, personal communication, June 1, 2000).iii.

Western feminism can also be seen to make dualistic delineations between Western women and non-Western women. (Bulbeck, 1998, pg. 129). Feminist understandings of the Japanese woman are quite similar to Western imperialistic notions of the Japanese woman, who is often viewed as sexually passive and submissive. Western feminist ideals of sexual self-expression when applied to Japanese society do not seem to take into consideration cultural differences including the status of women whose sexual choices are often driven by more pragmatic imperatives than self-expression. "Who you go to bed with is a luxury to be indulged in by the spoiled bourgeoisie of the rich west" (Bulbeck, 1998, pg. 129). In Japan, where career advancement is severely restricted for most women, decisions about whom you sleep with are not necessarily independent of fiscal and social considerations.

An alternative understanding of the attraction between Japanese women and Western men is offered by Karen Kelsky (1994, 1996). She moves away from western patriarchal generalities and understandings and examines this issue from the Japanese women's perspective. She introduces us, for the first time, to the image of self-directed Japanese women whose choices in these matters are deliberate and self-serving. Kelsky critically examines the phenomenon of 'yellow cabs', a term used by Japanese males, in particular those in the media, to describe and sensationalize those single Japanese women who sleep with foreigners – specifically those who take holidays overseas to have exotic experiences with non-Japanese men. She explores this phenomenon in the light of transnational theories which highlight postmodern notions of "carnivalesque, anarchy and liberation" (Kelsky, 1994, pg. 187) in a transnational world. She argues that these intentional encounters with non-Japanese men, while providing a domain in which Japanese
women can challenge and criticize the Japanese male, do not necessarily indicate a global movement towards cultural fusion and liberation but help instead to maintain and reinscribe racial distinctiveness in Japan by providing a point of reflexivity which highlights Japanese racial constructs of uniqueness (Kelsky, 1994, pg. 187). She notes that 'yellow cabs' often tend to be sophisticated connoisseurs, or avid consumers, of everything western and that these liaisons with Western men can be viewed as a part of this pattern of behaviour. ‘Yellow cabs’ incorporate these desires and experiences as a reference point in a discourse highlighting their frustrations with Japanese men, while at the same time drawing attention to perceived differences between Japanese and Western men, thereby reinforcing the notion Japanese of racial/national uniqueness. “This population of young Japanese women enacts and resists, defies and maintains, Japanese cultural norms of gender, race and sexuality”(Kelsky, 1996, pg. 175).

Kelsky briefly touches on the notion of the zero-to-hero by noting that most ‘yellow cabs’ seem to be unaware or unconcerned about Western males’ own personal agendas in seeking the oriental Other. These Japanese women view Western males as the foreign Other who, being entirely separate from the Japanese racial paradigm, fulfill a purely functional role in the pursuit of these women’s aims and interests. During her research in Hawaii, Kelsky noted that Western males who formed liaisons with ‘yellow cabs’ holidaying there “were blissfully convinced of their power over Japanese women, bragging about the sums of money they had extracted from them, and abusive, humiliating, and degrading sexual acts they had compelled the women to perform”(Kelsky, 1994, pg. 184).

This current study complements Kelsky’s comprehensive analysis of interracial gender relationships in Japan by further exploring this issue from the Western women’s point of view and locating the research in a less cosmopolitan locale than Kelsky, i.e. a provincial area of Japan. It also provides alternative explanations for many Japanese women’s desire for Western men.
Letting the c(h)at out of the bag

While living and socializing with the group of people who form this ethnographic study, I became privy to women's conversation about interracial gender issues within Japan and was especially intrigued by the zero-to-hero phenomenon. I have chosen to focus on Western women's reflections about gender issues within Japan as their opinions have, so far, been given little or no public voice. This is due to Western women's cultural and gender isolation while living in Japan, and a general reluctance to publicly voice their opinions. This reticence can be attributed to a genuine fear of being misconstrued as envious, either of their male colleagues' newfound social status or Japanese women's attractiveness. It may also be that, by voicing these observations about interracial gender relationships in Japan, Western women will publicly position themselves as powerless and thus loose any voice they do have.

Despite these concerns, some Western women living in Japan have attempted to express their opinions in online chat discussions about interracial gender issues in Japan. Some attempts by women to raise the topic have resulted in flamingvi. One contributor expressed sadness at not being able to express her point of view, saying that "it was upsetting the one previous time I engaged in this topic on another chat list, twicsvii, to be verbally beat up by a lot of gaijin guys defending the lifestyle, values, etc. of their Japanese honeys or spouses" (David Aldwinckle, 1998a, ¶ 12) viii. As a response to the airing of this hot topic a women's only email group was established. However, the group now seems to be no longer functioning, most likely a result of the transience of Western teachers in Japan, particularly women.ix As these online discussions seem to be the only public arena in which Western women have given voice to their concerns about gender issues specific to their lives in Japan, I have incorporated some of the statements into this study.

Western women in Japan who arrive with expectations of living active (heterosexual) sex lives often find themselves left out in the cold as "...foreign women are not so lucky when it comes to finding Japanese lovers" (My Nippon, 2001). While their male colleagues are busy chasing and being chased by Japanese women their own social interaction with Japanese males is often restricted to awkward conversations with seemingly wary or aloof Japanese men or crude suggestive conversations at the hands of drunken Japanese males.
These women often find that their sense of self-esteem, which relies partly on sexual identity and a sense of attractiveness, plummets in these circumstances. Clarissa, a 24-year-old Australian who spent a few months waiting for her husband to join her in Japan, noticed this happening to her. She was interviewed a week after her husband arrived in Japan.

I noticed that a while ago I was feeling unattractive because nobody does anything [to indicate desire or attractiveness] but as soon as they get drunk they can’t get enough of you…. sober they wouldn’t do anything but when they are drunk…. they crack onto you like any Western guy (Clarissa, personal communication, June 1, 2000).

A few of the Western women teaching in this location have established longer-term relationships with Japanese men. However, women participants in this study reported that these relationships appear to be with men who live less conventional lifestyles or who are already married. Three relationships particularised by participants in this study include one with a member of the Yakuza who makes drug runs between Columbia and Japan, and two with Japanese males who work in short term temporary jobs and “are being financially supported by Western women” (Rachel, personal communication, June 1, 2000). It may well be that these men are viewed as losers within the Japanese community, finding it difficult to attract local females and they, therefore turn to Western women living in Japan.

Participants in the study have proffered thoughtful and multivalent explanations for this lack of connection between Western women and Japanese males. The reasons given include the independent personalities of those Western women who choose to move to Japan, patriarchal attitudes towards women in Japan and a general lack of communication due to cultural or language difficulties.

A lot of the women who come over here are very strong and independent and they are feared the moment they get off the plane. I think the kind of woman they [Japanese men] would relate to better would be the ones that are still at home. We didn’t come over here because we are timid and shy and looking for men (Toni, personal communication, June 3, 2000).
Toni also makes clear that her own western expectations for romantic relationships exclude her from having a relationship with many Japanese males.

I’m a talker and I like to talk about ideas and books and I would find it very difficult to have, not necessarily a boyfriend-girlfriend relationship, but even a more intense relationship with a person that I couldn’t communicate with on that level (Toni, personal communication, June 3, 2000).

The distancing of Western women and Japanese men in this instance can be explained in terms of patriarchal attitudes within Japanese society. Western women’s expectations concerning romantic relationships which, in part, values conversational depth in a sexual partner. Patriarchal attitudes which regard feminine subservience and passivity as desirable may be further consolidated, for some Japanese men, by racial ideologies that value racial purity and uniqueness particularly for the native male. For others, who find contemporary Japanese women too assertive, and look to other Asian cultures for their ideal femininity (Bulbeck, 1998, pg. 182), the cultural difference between western and traditional Japanese femininities may be too wide a gulf to either attempt to or want to bridge. For those Japanese men who do not prescribe a certain type or race of woman as desirable, cultural differences and communication difficulties may be involved in the social distance existing between Western women and Japanese men. Western notions of romance and marriage, particularly Western women’s expectations concerning sex and romance, involve demonstration of warmth and affection, as well as a meeting of minds or in-depth conversation are all factors which can combine to create cross-cultural distance and misunderstanding.

Western Men Behaving Badly

Western males teaching English in Japan seem to be in a particularly privileged position with regard to interracial sex in Japan. As male sensei (teachers) their social status is relatively high. Opportunities to mix with Japanese women are unproblematic as contact is often made in the workplace.
The English teachers seem to have slightly higher success since they become popular among their students, most of whom are young women or happily married women and have plenty of time and money on their hands. Jack confides, "I am not exceptionally good-looking but I am some kind of celebrity in this little town outside of Nagasaki. I am the only gaijin around and life couldn't be better for me" (My Nippon, 2001).

The term zero-to-hero was used by most of the women participants in this study to describe many of their male counterparts who find themselves in a position similar to Jack. In particular, these Western women use the term to depict those Western males who misuse this rise in status and behave badly in Japan. Participants reported that the zero-to-hero type of Westerner is greatly over represented in Japan when compared to their respective home communities.

The behaviour of zero-to-heroes deemed as inappropriate by women participants in this study range from over inflated egos to shameful and disrespectful behaviour towards women, particularly Japanese women. Women participants in this study detailed many examples of men behaving badly including: overrated opinion of themselves; insulting and degrading behaviour towards women in public particularly Japanese women; inability to work cooperatively with women superiors in the workplace; sexual liaisons outside of monogamous relationships and in some cases complicated webs of infidelity.

You know one guy's left his wife, his Japanese wife. I didn't even realize he was married because he had a Japanese girlfriend. I thought he was playing up on his Japanese girlfriend when I saw him with someone else, but he was actually playing up on both his wife and his girlfriend.... I mean the guys are behaving in ways that they wouldn't get away with in their own countries. So the women from those countries are, of course, appalled (Marie, personal communication, June 6 2000).

These experiences and behaviours are not limited to the provincial city in which this study took place. Participants in this study report having similar discussions with female teaching colleagues teaching
in other locations in Japan and Asia. Women involved in online chat discussions about interracial gender issues also elucidate the zero-to-hero phenomenon. One contributor described the ‘Japanized Gaijin’xi as a Western male with attitudes and behaviours strikingly similar to the zero-to-hero phenomenon. In addition, the ‘Japanized Gaijin’ adapts to his new found celebrity, has great difficulty readapting to his original Western culture and ends up marrying and becoming a long term resident of Japan (David Aldwinckle, 1998a, ¶ 14). Domestic marriage statistics for 1997 support the observation that many Western males marry into Japan. Figures reveal that foreign grooms from the US are seven times more likely to marry a Japanese national than foreign brides (Kaur, 2001, ¶ 9).

The participants in this study readily acknowledge that the zero-to-hero is not representative of every Western male they encounter while living in Japan. While zero-to-heroes are reported as over-represented in the expatriate English speaking community, and hail from all the western cultures mentioned in this study, other Western males cannot be described in this way. Western males who enter Japan with existing partners seem less likely to behave like zero-to-heroes, although a few have been known to leave their wives for Japanese partners while living in Japan. A limited number of single males are not induced by their newfound status to behave in superior or exploitative ways (Marie, personal communication, June 6 2000).

Japanese women’s desire for the company of Western males seems based on preconceived notions of the Western male as being more gentle, romantic and egalitarian than Japanese males. Exposure to western ideals through media texts particularly women’s magazines in Japan promotes ideals like individuality, leisure, international sophistication and sexual expression. Furthermore, many Japanese versions of international magazines use only Western models, male and female, within their glossy pages (Marie and Yuki, personal communication, May 10 2001).

The notion of a kind and romantic Western male does not seem to be based in the reality of the situation as described by in situ Western females. Here zero-to-heroes hold sway. Western females in this transnational borderland portray many of their male counterparts as general losers. One participant explained the phenomenon quite succinctly. “I think that consciously or subconsciously the reason a
lot of these men come over here is because they can’t really find a relationship [at home]” (Toni, personal communication, June 3, 2000). She explains further, “…Somebody [Western male] told me that I remind them of everything that they are not back in their own country” (Toni, personal communication, June 3, 2000). This fatal attraction (Gerster, 1999, pg.147) and the resulting relationships between Western males and Japanese women seems doomed from the start. It is questionable as to whether these relationships fulfil the aspirations of many of these women.

Western men living in this transnational borderland are sought after as alternatives to Japanese boyfriends and husbands. It is clear from this research and other studies (Kelsky, 1994, 1996) that Japanese women perceive these men as being more affectionate, kind and egalitarian than Japanese males. However, in view of Western women’s reports on the behaviour of most of these men, it seems that zero-to-heroes adapt readily to their new found status by becoming more arrogant, aloof and dominating than would be acceptable in their home countries and thereby minimising any perceived difference between Japanese and western masculinities.

Christmas trees: pining for something different

Japanese colloquialisms like sebun-irebun (seven eleven) and burasagarizoku (arm hangers) are used within Japan to denote the sexual availability of Japanese women (Kelsky, 1996, pg. 178). Westerners in this study have also taken to this Japanese habit of inventing colloquialisms to allude to the availability and behaviours of certain groups of people, zero-to-hero being a prime example. Another colloquialism used within Japan is the term ‘Christmas tree’. In Japan, decorated Christmas trees are used to celebrate this western festival. However, unlike most western communities where the Christmas tree is displayed for an extended period, the Japanese custom is to put everything away immediately, on the night of the 25th of December. Just as Christmas trees in Japan are of no use after the 25th of December Japanese women are thought to be of no use (for marriage) after 25 years of age. “A man will look at a 25 year old and think she is okay to marry, just. But a 26 year old woman is not okay” (Yuki, personal communication, April 25 2001) Yuki explains further that this is not what really happens in Japan but
is indicative of an ideal still existent in Japan. This ideal still seems to have some influence on the Japanese community.

Social pressure on Japanese women to marry before the age of 30 is still strong for some women in provincial Japan and if you are not married by the time you are 25 then you start worrying and then if you are not married by the time you are 30 there is a good chance your parents will be starting to organise an arranged marriage for you (Marie, personal communication, June 6 2000).

This sort of pressure makes it hard for young women to “find a place, their own place to be and by themselves... Often they see that a foreign man and moving to a foreign country will give them a completely new start” (Marie, personal communication, June 6 2000).

Other reflections by the participants in this study about the reasons many Japanese women seek Western partners are similar, in part, to Kelskey’s understandings about Japanese women’s attraction to Western males; a reflexive response to an overtly patriarchal Japanese society (Kelsky, 1996). However, unlike Kelsky’s ‘yellow cabs’ who seek transitory experiences or temporary relationships with Western males, participants in this study report that many of the Japanese women they encounter are usually seeking permanent relationships as an alternative to Japanese partners, and they constitute a

...combination of women assuming that they will be better treated by the Western men because of the way Western men are raised. But also, they see it as a ticket out to this land of opportunity that is foreign and exotic (Toni, personal communication, June 3, 2000).

The appeal of Western males, combined with the social acceptability of ongoing or extracurricular education, makes English language classes an ideal forum for Japanese women to meet Western males. The English language schools have taken advantage of this, sometimes advertising the added benefit of socialising with foreign teachers outside school hours. Commodification of the Western male also takes place in this borderland through more subtle work practices. In one particular school, Japanese administrative staff
have been known to ask Western male teachers to do walk-bys during demonstration English lessons where prospective students try a lesson before signing up to the school. In another school one particular Western male known for his surfing ability and surfer looks has been purposefully chosen by Japanese staff, to take demonstration lessons which have been booked by teenage girls. This is over and above the women teachers rostered to that job on that day. It is not surprising then that female students outnumber male students in this specific transnational borderland (Marie, personal communication, June 6 2000).

**Conclusion**

Western women, particularly well educated women like English teachers living in Japan, continue to be distanced from Japanese males as a result of local patriarchal reactions to gender stereotypes of the Western woman as more assertive and proactive than her Japanese counterpart and cultural differences in relation to romance and dating. From this study it can be also said that the social inclusion of Western men in the interracial dating game in provincial Japan, does not necessarily mean that these Japanese women will meet the type of man they are expecting, i.e. a more kind and egalitarian male. Since many Western men seem to react to their rise in popularity by maltreating and subjugating Japanese women in a manner echoing neo-colonial attitudes and behaviours many Japanese women may find their expectations do not match the reality of dating a Western male in Japan.

Japanese national desire to be viewed as progressive and modern is, as with most non Western and western societies, closely aligned with material commodities, particularly western commodities. This means that “western images probably have more advantage over indigenous ones”(Bulbeck, 1998, pg. 165). However, within this specific transnational borderland sexual desire for the Western Other is adopted by some Japanese women while Japanese males generally resist and devalue this type of desire. Local intersections of race and gender do not always result in the even social positioning of the exotic Other. Specific, local issues about race and gender and their intersection with western notions concerning race and gender can produce local resistance, as in the case of Japanese males, and
inclusion as in the case of many Japanese women and Western males.

Endnotes

i The term Western is used in this paper to differentiate people from a variety of English speaking countries from local Japanese. It is used to avoid cumbersome and repetitive use of the list of nationalities of the people involved in this study and not to denote any neo-colonial values or attitudes.

ii In Japan the term native English speaker denotes anyone brought up in an English speaking country. It does not necessarily indicate indigenousness.

iii Attaching plastic animals and custom designed transfers are two of the latest ways to accessorise and individualised your mobile phone in Japan.

iv This statement does not imply that gender equity within western society is the exemplar and a marker for comparison.

v It should be noted here that older Western women teaching English in Japan do hold some level of status in view of the fact that teachers in Japan usually hold significant position and respect (Marie, Personal communication, 25th April, 2001).

vi "Flaming as defined in Eric Raymond's Hacker's Dictionary means posting messages "intended to insult and provoke"" (Cited in Velarde, 1996, ¶ 1)

vii Twics is an in-house reference to a related chat list website.

viii The statements were also commented on and sent to The Dead Fukuzawa Society, an internet discussion group concerned with issues related to Asian affairs and the US-Japan relationship (est.1993 #17) and ISSHO, a site “established... to monitor the multiculturalisation process of Japan’s society” (1998 #18)

ix The limited number of online sites dedicated to discussion about Westerners’ Japanese experiences are produced by males. Males also dominate control and participation in the websites. This is not surprising as most long-term gaijin residents are male.

x Within this paradigm the native male is closely associated with racial authenticity while women are more readily associated with the foreign. (Kelsky, 1996, pg. 185).

xi “I would like to announce the Japanized Gaijin Male as Jerk theory. This one goes: the gaijin male goes to Japan, adapts himself to the bootlicking ways of the single Japanese female and thereafter HAS to marry a Japanese because no non-Japanese female can bear
him. Therefore, though he may try to leave his adapted cocoon, he flounders badly when he goes abroad, insulting and infuriating the women he tries to date, and ultimately returns disheartened and settles in the land of Wa. There, his newly ensconced J'ese wife proceeds to browbeat and budget him into complete submission. He has recurrent nightmares of losing his work visa and being deported, but having nowhere to go" (Dave Aldwinckle, 1998, ¶ 12).

Bibliography


Darning the Gaps:
A webtool to assist transition between School and University

Jack Seddon

ABSTRACT: This paper presents the story of a website tool in transition. It looks at what started as a facilitation site for an equity funded transition program, namely the 'Race Around ECU' video competition (L. Hunt 1999). Over time, this site has been redesigned as a communication channel and activity catalyst to assist students in high school be better prepared to successfully take on the university experience. The RAECU website is not only an enculturation vehicle and information centre for high school students who are considering a path to university, but also a reference for those who, may not have really regarded university as an option. It is hoped that this latter (unknown) group will come in contact with the website through their schools, and the university's efforts to publicise it (http://www.ecu.edu.au/pa/raecu).

Introduction

Transition

Transition is an issue much talked about in both secondary and tertiary institutions. In the literature of educators and academics within the western world the concept of university transition is generally viewed as; the first year of university, starting from the first day of first term and finishing at the end of that year's exams. [Evans, 2000 p 1-13] in her literature review distills that in Australia, Europe and the US, 'transition' relates to the successful movement of students from secondary to tertiary education.
Transition is also a hot topic for the public relations arena. "Derrières sur chaises" is the cry from the economic echelons. The search is on for the perfect transitional experience, both in terms of institutions serving their potential clientele and the requirements that students have in relation to this complex metamorphic period.

The active truth learned from my peer encounters (1998-2001) is that you only really become aware of the plethora of intended support services, and understand their benefits, once you have come around to advising others, who are coming along after you, about those very services you didn't use. Vincent Tinto notes that universities are becoming increasingly concerned with transition issues, and many institutions have made many important moves to support students across transition [Tinto, 2000 p 49]. This rush of attention is all well and good and should provide some interesting research outcomes as various groups produce various plans and put them into action. Nonetheless, this author believes that the starting blocks are too close to the race itself. We need to retreat from the jolting orientation day and consider the idea of a smoother transition experience. There is vagueness in the observation of Tinto, and it lies in the word across. The question that has to be asked is: What space of time does 'across' deal with? Or more importantly - When does/should transition commence?

**Take a Step Back**

The conception of pre-transition naturally pervades the time before the first day of university; the period before induction. Pre-transition could, in essence, stretch back through the high school years and even back through the primary years. However it is sensible to concentrate on the senior high school years, as that is where our present system concentrates its entry assessment.

So, with a little disparate knowledge (much of it hearsay) potential students, turn up to what is usually called 'Orientation day'. A day on which you become inducted into university life, self-guided learning and the required social skills, not to mention; where you are, where everything else is and who everybody is. At least in the armed forces they have the decency to actually call it induction. The Oxford dictionary gives the definition of 'induction' as - "A ceremony or formal act by which a person is inducted, as into office or military
The Oxford also gives a meaning for orientation as, induction. Synge wrote of a dictionary word game in which the aim was, to look up a word you are given and then look up a word in its definition, until you are able to oscillate between two words "VISH!" the winner cries, [Synge, 1957 p 23-30]. A more modern interpretation might be enculturation. I digress, but the important point is that orientation often dealt with in the brash manner of an induction. Mantz Yorke's research shows that institutions do not always place enough emphasis on preparing students, and on the first year experience in general [Yorke, 2000 p 32-33], Yorke summises that institutions could do the following:

- Design and deliver material that encourages learning autonomously.
- Provide assessment and feedback early in the program.
- Assure that the approach is conducive to student learning.
- Create a supportive and welcoming environment.
- Ensure that the appropriate learning resources are available.
- Use appropriate mentoring and peer support.
- Be alert to and avoid discriminatory practices in programmes and institutions.
- Promote the availability of services (eg: financial, personal, accommodations).

(p45)

Universities

Universities that are actively engaged in making the transitional condition more palatable are developing planning and support services to try and improve the transition experience. They are spurred on by findings, such as Robert Pargetter's, who asserts that - an alarming percentage of first year students battle with the situation and have an unhappy start to their studies [Pargetter, 2000 p 17], but tertiary existence is more than study alone.

This problematic time is recognised by many writers including [Kantanis, 2000; Watt, 2000; Evans, 2000]. The transition issue includes: awareness of what was expected, prevailing finances, failing to obtain the results expected and social pressures and isolation. Richard James deduces that an adequate match between students' experience and their course combinations is a significant
determinant in a successful transition from school to university [James, 2000 p 98-99].

The precursor to choosing fruitful subjects and streams at university are the choices made in the final years of high school. Forming a sound choice of university program however is an important starting point for success and is often not supported by course information in a meaningful way. Angel Calderon and colleagues conclude that students' choice of subjects in VCE (Victorian Certificate of Education) weighs heavily in determining successful ENTRY scores [Calderon, 2000 p 112]. Herein lies another problem most research only measures success or failure in terms of grades and pass rates. A more holistic view is needed for the complexity of these issues.

While these and other concerns are being considered in universities, the dissemination of transitional information and services remains institutionalised, and therefore not very accessible for outsiders such as high school students.

**High Schools**

Most secondary schools are concerned that they should provide some form of assistance to their senior students in terms of their potential, desires and readiness for university. Transitional information is presented in several ways including printed, formal and hearsay information. All the issues raised during the 'last school holiday' further complicate the communication process. There are difficulties and pressures such as: Student's self awareness, obtaining good course advice, family pressures and adolescent issues to name a few. Some schools even offer a guidance service to families of ex-students, making available counselling services and other intuitive techniques as [Pargetter, 2000 p 25] reports in his Haileybury research.

**Problematic Attributes**

Under the present HECS scheme, students wind up with massive debt loads at the end of their courses'. Government contributions that allowed for a less stressful level of debt acquisition would not seem unrealistic. The method of repayment is fair; it is perhaps the level of
assistance that is dubious. But that is an economic and largely political debate, and one I do not wish to pursue here.

Unlike education finance, I think we can do something, in-house, about improving the delivery of information, learning and services surrounding transition and pre-transition issues.

- Awareness of what was expected
- Mismatch between student and course
- Failing to obtain the results expected
- Loss of support networks
- Gaining appropriate self-directed learning skills (metacognitive)
- Lack of information about university life
- Unexpected need for time management skills
- Social isolation

Information concerning these problematic attributes is abundant, but it is disparate and often "...decontextualised from meaningful situations" [Fetherston, 2001 p 37].

**What does it all mean**

[Fetherston, 2001 p 39] suggests part of the answer could lie in the underlying pedagogy and the application of sound instructional design in addressing the problematic attributes of a particular learning situation. In the case of the other difficulties found by new university entrants, the problems exist chiefly within the life-space reality of the student concerned. The starting point should be understanding the problems of students preparing to face the difficulties of university. If they are exposed to skills likely to enhance the transition process (precognisance), they will surely be better off when they arrive. If we can understand the problems, we can analyse them pedagogically and design instructionally appropriate responses to truly assist in overcoming them.
Thus schools are running programs to help high school students cross into university and universities are running programs to encourage and support new university entrants but where is the bridge between the two?

At what time do students stop looking at university from the secondary standpoint, and start to enculturate as a university student (a self-guided, life-long learner)? Probably, for most, it is at the time of acceptance of a place, offered by a university after your final high school exam results are posted (and are good enough). This is often too late to properly digest the resulting possibilities. [Pargetter, 2000 p 17] argues that "It is important to ensure that the quality and completeness of course and careers advice is optimal. Again it is best achieved with a systematic program over many years..." Pargetter also says that it should involve parents and effective exposure programs.

Transition to the WWW - Competition Horizons

To address this issue of transition using the technology of the World Wide Web may seem obvious in these times. However, the real challenge is to provide a website that not only attends to the needs of students who may embark on the journey of transition, but which is designed with a pedagogical approach to those needs.

My involvement in transition issues began with the production of a website as part of the requirements of a third year project management unit in Interactive Multimedia (IMM). Our team (Jack Seddon, Neil Grant, Ben Kosh and Oliver White) was asked to design and produce a site to facilitate the running of the Race Around ECU project, which was an equity funded project initiated by J. Silburn and L. Hunt. The Race Around ECU (RAECU) concept was that high school students formed groups and were introduced to trained student ambassadors from Edith Cowan University (ECU). With this mentoring assistance the high school students visited the ECU campuses and produced four-minute video documentaries, telling stories connected with some aspect of the High School to University transition experience. The resulting videos, which displayed great ingenuity, were judged on several criteria and prizes presented at a gala night. [Hunt, 2000 26th June].
The project as a video competition was only funded 1998-2000. However it yielded some valuable research findings for Jenny Silburn and Lynne Hunt concerning high school student conceptions of university. It was decided to table these conceptions and address them in an on-going way by the further development of the RAECU website.

**So where to from there...**

While formulating the task of how the website could evolve, it became apparent that the power of the Internet could be harnessed to create a communications channel between High Schools and Universities. As the idea developed, it appeared there was a niche for a transition website that was predominantly audience-targeted at students from senior high school years. The RAECU website offers accessible information, services and activities to help chrysolite students understand what the change (transition) to university education encompasses. The web presence aims to be a communications hub that acts as a contact point for the two parties, hopefully maturing to become a gymnasium for the mind/life-space of students contemplating university.

In more theoretical terms, however, How do we endow a web-space with a set of attributes to best build and introduce a metacognitive tool-set that will assist in scaffolding students transitional knowledge and advance their sense of confidence and readiness for university?

**The new RAECU Website**

Exposure to appropriate sympathetic information and the fostering of cognitive strategies, are seen as priorities for the RAECU website. The site's present information design has been categorised and organised using the classic questions of: Who, What, When, Where, Why, and How. This creates a structure that should theoretically hold all the activities, information, links and virtual interactivity that might be deemed, now or in the future, appropriate. Employing this categorisation structure should, in turn, provide a sound basis for the website's longevity.
Composition considerations

The website should provide a core of important contextual content, constructed using prudent principles of instructional design. Much of the extended or external content already exists on the university's network and can be linked too, thereby eliminating the need to reinvent university specific content. However, the extended network information and services should be introduced from within the RAECU site with a sympathetic understanding for the target audience.

[Kantanis, 2000 p 109] sites (Kowalski, 1977) in saying that, "transition to university should be viewed in a holistic manner... we are dealing with people's lives." The following diagram may help in conceptualising the interdependencies that are at play when considering the needs of transition.

![A Life space model of an individual](image)

Making it happen

To foster the site's acceptance and encourage the initialisation of a community of interested users, strategies to assist teachers with the use of the RAECU site in their classes are already embedded in the present site design. The strategies include suggestions and activities which are student-centred and discovery-driven. Making it convenient for teachers to include the RAECU website into existing
classroom structures, will hopefully increase traffic and expand the site's umbrella. Constructivist principles are also utilised, as the most relevant response to pedagogical considerations.

**Now the Scene is Set**

With the framework now in place, it is time to determine if the support such a webtool can provide, makes it worth continued development. Whether indeed, the website makes a positive impression on the way the target audience perceives university, transition and the challenges of tertiary education.

In the coming months a study and questionnaire survey will help determine this. The research will involve surveying students who have not yet been exposed to the RAECU Website, followed by a post-perusal survey. The aim is to determine if, in terms of transition, they have been positively affected by utilising the site.

**Maturity and integration**

If the webtool is shown to have a beneficial effect on the transition process, how should it be proffered to the audience? At present the suggestion is to extend its use as much as possible by promoting its location and features widely. The RAECU Website should also be integrated within services provided by the university for existing and intended students.

Beyond this, if success still warrants continued attention, other universities should emulate the concept. A portal could be produced that would link the various universities' sites together. Then, with continued vigilance and maintenance, the WWW could indeed be utilised to provide some tangible improvement in the transition experience.

There are all sorts of spin-offs from this direction of thinking. One coming directly to mind is the training of learners to use the web as a learning aid. Fetherston raises a challenge, in regard to the use of the Web, of equipping our students with critical thinking skills so that they can confidently use information on the Web for learning purposes [Fetherston, 2001 p 35].
Conclusion

The hope within all this racing around ECU is to add to the success of transition to university and to offer university as an option to those who may not have thought it one. During the process it would be an added to further the debate on the pedagogical challenges of the www.

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The high school students who participated in the 'Race Around Edith Cowan University' had fun whilst working across the boundaries of science, technology, media and art. The project was designed by Associate Professor Lynne Hunt and Dr Jenny Silburn to give high school students the opportunity to record their impressions of Edith Cowan University in four-minute documentaries. Its aim was to encourage high school students to investigate the transition from high school to university.

"Many high school students have never visited a university campus and do not have the information that might help them to make decisions about their post-school choices. This project gave them the opportunity to find out about university in their own way", said Dr Lynne Hunt.

Over two hundred students in years 10-12 have participated in the project through which they learned how to use technology to produce and edit a videotaped documentary. Nearly forty documentaries have been produced. Some described how to make a choice between science and arts courses, others used innovative techniques, such as the talking goldfish or the 'ECU Rap' to explore aspects of university life.

Parents, students and staff from the participating schools were invited to a Gala Night at which finalist documentaries were screened and judged by a panel of media experts. The winning schools received a range of prizes including: a state-of-the-art, digital video camera, donated by SONY; free membership of ECU Sport Centre; books from ECU Bookshop; free flights over Perth with ECU's Aviation students; computing software from Buzzle Corp; and free tickets provided by the Western Australian Academy of Performing Arts. "The Gala Night was fantastic," said Dr Jenny Silburn, "The students treated the evening as if it were the Oscars!"

Compilations of the students' documentaries are now available for use in schools. "They will be particularly useful in Vocational Education classes," Dr Lynne Hunt said, "What is exciting is that they are based on the high school students' own research, and they give a strong message that research can be fun".

Inspired by the project, some of ECU's third year students have extended the project by developing a web site that creates a virtual Race Around ECU. www.ecu.edu.au/pa/raecu
This web site provides opportunities for metropolitan, rural and remote students to learn something of university life. "Try it and see!" said Honours student, Jack Seddon, "It also saves teachers time because it includes suggestions for teachers on how to incorporate use of the site into their classroom activities". This web site will be used to extend the concept of the original competition. Click Around ECU, as it will be called, will be piloted in six schools, later in 2001. The aim will be to enhance high school students' information technology and multimedia skills by inviting them to make their own web sites about Edith Cowan University.
ABSTRACT: A social marketing program on prevention of HIV/AIDS needs to be implemented in the affected African countries, and this might make it easier to educate people about the dangers of HIV/AIDS. Although several programs have been implemented, different ways of approaching this epidemic might help find relevant solutions.

HIV/AIDS (Human Immunodeficiency Virus) and (Acquired Immunodeficiency Disease Syndrome) has been an epidemic that has hit the African continent in the past five years and has wiped out a great proportion of the population. The origin of the virus and the origin of an epidemic are different. The first is purely biological; the other is both biological and social. A more plausible idea is that blood transfusions and hypodermic needles, (which were often reused in Africa without being sterilized), boosted the evolution and spread of emerging HIVs, by giving these viruses more chances to adapt to human biology.

According to Shoofs, most scientists believe the HIV virus, which is spread through sexual contact, shared drug needles, or blood transfusions, causes AIDS. Some scientist questions the link between HIV and AIDS, but many say their questions only distract people from the fact that AIDS kills. For many developing nations, it is quickly becoming a security and stability problem.

But needles and transfusions probably aren’t the whole story. After all, traditional African healers reuse blades to make medicinal incisions in their patients, and elders reuse knives for ritual scarification. They too could be spreading the disease.
While HIV’s history is fascinating, the more urgent question concerns its future. Prostitutes have been the scapegoats for AIDS in Africa, where the disease is spread mainly by heterosexual sex, and where men blame sex workers for bringing down AIDS. But in the richest of ironies, some prostitutes have provided researchers with valuable clues to the intricate workings of the immune system, and especially how it might be able to fend off the virus. In fact, the knowledge researchers gained from these women has been translated into a promising vaccine that is about to be tested in humans. The scapegoats of Africa’s epidemic just might turn out to rank among its saviours. (Shoofs, 2000, p.1).

The main problem with AIDS, according to activists, is that many people fail to acknowledge its prevalence or the risks posed by their personal behaviour. The disease flourishes in Africa due to the sociological conditions of that continent. Activists say men often work as migrant labourers, living in work camps in major cities for months at a time and only occasionally visiting their families (Sorrells, 2001, p.2). This environment encourages prostitution, which can help spread the disease. Unfortunately culture also plays a big role in the spread of the disease because the African family dynamics often prevent the woman from questioning her husband’s fidelity or demanding that he abstain from extramarital sex. This dynamic also prevents her from denying sex to her husband; thus, many wives become infected by their husbands.

Many of the methods used to prevent HIV/AIDS in the Western countries are not accepted in Africa. Condoms are sometimes considered unnatural in Africa; often people don’t even understand how to use them. (Sorrells, 2001, p.2). When faced with such misunderstandings or cultural barriers, it becomes necessary to change one’s approach.

In theory, behavioural changes could stop the epidemic, and many Africans look to Uganda for hope. Ugandan president Yoweri Museveni aggressively confronted the epidemic, and infection rates in some urban areas have declined dramatically since the early 1990's; one surveillance site found that the prevalence of the virus has fallen by half. While education certainly can save millions, the
fact is that behavioural change has never managed to halt the epidemic, not even in wealthy countries. (Shoofs, 2000, p.2).

Indeed African scientists are actively contributing to the research, providing ideas and laboratory research, pushing scientist to put candidate vaccines into trials on their continent, and insisting that the world develop vaccines that are likely to work against their subtypes of HIV. South Africa has the most developed biomedical research capacity in Africa. President Thabo Mbeki has declared an AIDS vaccine a top priority, committing government funds to a soup-to-nuts research effort. (Shoofs, 2000p.5).

While the Africans are pushing as hard as they can, AIDS scientists around the worked are also putting vaccines high on the agenda. The US National Institutes of Health, which dwarfs any other medical research agency in the world, and which spends more than a billion dollars on AIDS research alone, used to give vaccine research less than 10 percent of its AIDS budget, less than any other category of HIV research. But over the last three years it has ratcheted up that percentage, bringing in Nobel Laureate David Baltimore to lead its effort. Whereas the mood was once pessimistic, most scientists now believe a vaccine is possible. (Shoofs, 2000,p.5). Human vaccine trials have already started.

According to Shoofs, even if the scientific obstacles are overcome, another hurdle will remain. Vast impoverished, and riven by civil war, the Democratic Republic of Congo is the hardest place on earth to conduct a vaccination campaign. IAVI president Seth Berkley, who worked in Uganda during the early days of the AIDS epidemic, is a man in perpetual motion. He has lobbied the World Bank, the European Union, the G-7, and any other deep pocket that will listen to create a fund for distributing an AIDS vaccine in the developing world. In addition, IAVI is making sure the vaccines it bankrolls will be available in poor countries. ( 2000, p.3).

Since AIDS is often spread by sex or drug use- activities common in younger adults- the disease is decimating the middle of society. Many of those dying are the backbone of African society. It has been known to be the worst epidemic in modern history and the worldwide response has been wholly inadequate. (Sorrells, 2001,p.3).
McDermott notes that, most African nations have unstable economies. Recent economic advances are being wiped out as the working class dies and life expectancy collapses, down to 30 years in some places. Such burdens would be hard on a healthy economy but could destroy fragile ones like those of Africa. These potential problems led President Bill Clinton to declare AIDS a national security threat in April 2000. Some argue that dwindling resources in AIDS ravaged nations might lead to international wars as countries compete for scarce resources. This could kill so many people that it might disrupt the global economy. (Sorrells, 2001, p.3).

SOCIAL MARKETING:

Social marketing is a form of marketing based on the community level to promote public health and targets at the behavioural structure of a community. It aims to promote services that will assist a community in the best way possible. In this case, social marketing will be used to promote prevention of HIV/AIDS in Africa.

The United Nations and the World Bank plan to create a fund and run a program that will involve the international community. This will support education, prevention, treatment and vaccine development efforts. This will also include African leaders who sometimes fritter away money through their bureaucracies, and to directly involve local African leaders in deciding how to educate the local population on AIDS prevention, says McDermott. Tribal healers could be involved in prevention programs. Advice from a healer carries weight with many people in Africa. Cultural sensitivity should be considered in this case. In many countries in Africa, there are no words to discuss sex unlike the other continents where discussion is so everyday that it is regularly included on television.

At the same time, the United Nations, with its Joint Programme on HIV/AIDS (UNAIDS), and other organizations are devising programs to bring antiretroviral therapies to sub-Saharan Africa describing the drugs as a political tool used to create wider access to general health care. Money alone will not solve the problem. The world community has tried to formulate a plan that has four
components: prevention, treatment, community support and research and development. (Kleep, 1996, p.157)

The global community must increase efforts to support Africa's infrastructure because if the disease is ever brought under control, there might not be enough people left there to rebuild their communities.

The United Nations aims at educating children and women about AIDS and also trains health workers; distribute health kits. South Africa has one of the youngest populations in the world with more than 40% under 18 years of age. Love life seminars familiarize the youngsters with the risks of sex and provide medical advice for those too scared to bring up the disease at home. AIDS has created a generation of orphans, below, who live on the streets in deep poverty. No one cares for them and they are considered a nexus for another generation of infection. A placement program aims to find homes for some of them and to kick start international awareness of the problem. (Time magazine, 2001, p.8).

Sex education and condom distribution is also part of the program. Many women after losing their husbands to AIDS and have no jobs turn to prostitution hence spreading the disease. They should be taught about the consequences of spreading the disease or even contracting it. There should also be programs to provide loans and training for the widows to assist them in making a living to keep their families together. For example, health officials have been working in Kenya recently spending priorities were allocated for drugs to treat sexually transmitted diseases, female condoms, and care for orphans of the pandemic.

The mass media nevertheless should provide an entry point to any health promotion campaign, related to HIV. A sophisticated campaign should do more than simply provide information relating to risk reduction. While some information on AIDS/HIV and preventative behaviours (condoms and safe sex) may be necessary for the community in general, some aspects regarding sexual practices, may be inappropriate or offensive to the wider public. (Bunton, 1993, p.31). Information channels should therefore be targeted so that appropriate information is made available to all the relevant groups.
A two-day BBC scheduling of AIDS in Africa educational material provided a good model of how information relating to risk and required behavioural change may be undertaken. This campaign was influential as is not only told people that certain behaviours were necessary, it actually showed how to perform them, for example by giving explicit demonstrations of how to put a condom on. (Dateline film 2001).

With the media being potentially powerful in playing the role of prevention of the spread of HIV, it must be remembered that there are a multitude of other influences on behaviour. These may be structural, relation to the provision of services (education or health), or environmental. Local voluntary agencies may be the best providers of personalized advice concerning AIDS/HIV and safer sexual practice or distributing leaflets. (Bunton, 1993,p.33). This should involve opinion leaders, as they will have the advantage of speaking the same language as users and providing strong role models. It is also important that this service is freely available to provide help in developing appropriate social skills, and so on.

According to Bunton, environmental changes may also promote appropriate behaviours. The embarrassing aspect of safer sex is the purchase of condoms. The most radical approach to encourage their use may be to make them freely available to all potential users. Alternatively, more widespread distribution through supermarkets may normalize their use and make purchase simpler.

According to a survey carried out in Tanzania in East Africa by Knut-Inge Kleep, the main objectives for the implementation of a comprehensive HIV/AIDS control program include strategies to:

- Prevent sexual transmission of HIV
- Prevent transmission through blood, blood products and skin-piercing activities.
- Reduce transmission from mother to child
- Provide health care for these people
- Promote action to reduce the social and economic consequences of the HIV/AIDS epidemic.

Another program that should be incorporated is promoting AIDS/HIV awareness in primary and high school levels. To achieve this goal, the following specific objectives should be put forth:
- Increase children's awareness of AIDS and its magnitude and severity
- Increase their knowledge about HIV/AIDS, its transmission, and appropriate preventive measures.
- Create more positive attitudes about socializing with and caring for people with AIDS
- Foster attitudes and subjective norms that reduce the intention to engage in and actual involvement with HIV risk-related behaviours.
- Teach social skills that may increase children's abilities to avoid high-risk situations.

As a method of social marketing, these organizations should formulate strategies to educate the target groups. The key target groups included here are:

- General public
- Community leaders
- Teachers
- School children
- Political leaders
- Health care workers
- People with HIV/AIDS
- Bar workers, truck drivers and miners
- Commercial sex workers
- Rural women (Kleep, 1996, 157-162)

A social marketing programme needs to be implemented and this might make it easier to educate the people about the dangers of AIDS. Although several programmes have been implemented earlier, different way of approaching this epidemic might help find relevant solutions. One alternative solution would be to target younger women, a group previously neglected as a target group.

Young women between the age of 15 and 35 years should be a major target public because they seem to be more vulnerable to the risk factors involved in getting infected by HIV. This is because among African cultures, the girl child is not educated and gets married off not knowing what her rights as a woman are. Education on safe sex
practices and also blood transfusion and syringe use, will assist in preventing the spread of the disease among young women. It will also offer some protection for the next generation.

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Computer Hacking
The evolving face of computer hacking

Nicholas Tan

“Computer hacking is one of the most damaging crimes of our times. Every year, more and more computers are falling victims to hackers. As the world’s dependency upon computers increases, so does the threat of the hacker.” (Kinne, 1989, ¶ 19)

Introduction

The proliferation of computer technology since we have entered the Information Age has been accompanied by the strong growth of the computer underground. Computers have had – and continue to have – a profound impact. Their influence on our daily activities is far reaching, from home users to corporate customers to government agencies.

In recent years, stories about attacks, break-ins, disruptions, hacking, credit card fraud, virus infections and the like, have appeared in the mainstream media. While they have varying impacts and are in reality committed by people with fairly disparate agendas, it has not stopped a “diffuse group called ‘hackers’ from being the target of scorn and blame for these actions.” (Denning, 1990) The extent of our vulnerability to the nefarious actions of a hacker is summarised by Fred B. Schneider, a professor of computer science at Cornell University, in an interview for popular media giant CNNInteractive.
He says it would not be difficult at all for someone to launch an attack against another. (Christensen, 1999) Here, Schneider is referring to the act of cyberterrorism, or starting what is commonly known as information warfare. In such cases of warfare, computer hackers operate as if they were guerrillas, or soldiers, and the virtual networks of computers become the battlefields.

"While hackers now traverse our global computer networks at will and with impunity, techno-ethics are virtually non-existent ... The computer may well become the Achilles’ heel of the post industrial society." (Bequai, 1990). To derive a clearer picture of who yesterday’s soldiers/guerillas are, who they will be tomorrow and how they have come to be in that position, let us examine the history, culture and myths surrounding the hacker.

**A brief history and the definition of a hacker**

One of the better definitions of the term hacker in Random House Webster’s College Dictionary is “a computer user who attempts to gain unauthorized access to proprietary computer systems.” Better, because hacking is a highly controversial topic with extremists on either end denouncing it or glorifying it. Furthermore, the ever-changing nature of the Internet presents difficulties when diverse groups of people cannot agree on a single encompassing definition. The weakness in the dictionary definition is the lack of mention of the intent of the hacker. As will be seen further in this paper, hackers and their sympathizers often claim that one of the reasons why definitions are so difficult to decide on is because of the intent, and within their community and culture, there is a distinct difference. For the purpose of this paper, the definition of a hacker can be generalised as ‘a person who gains unauthorised access to a computer system without a malicious intent’. This is to differentiate from the exact opposite of a hacker - a cracker, or ‘one who gains access with a malicious intent’ (criminal hacker). It is also worth mentioning that there is also another group of hackers known as ‘phreakers’. They are the ones who hack telecommunications systems or networks.

Hackers had their beginnings as “computer enthusiasts born of the 1960s MIT Railroad Club” (Hackers, Crackers and Phreakers Oh
My! 1998, p. 18). Their interest in computers, combined with their deep views about freedom of information and individual rights, developed into what became known as the ‘Hackers’ Ethics’. (Bavinton, 1998, p. 15-16) This was a moral code by which hackers hacked into systems, vowing they would not cause any criminal damage whilst on a quest to further their knowledge of the inner workings of a system. However, during the 1980s, increased media exposure and public interest coupled with a crackdown upon computer hackers, and media activities placed hackers in a very negative light. The computer community realised that there were deviants among the hackers and labelled them ‘crackers’, but it was too late. “The term hacker had been tattooed on anyone who violated or attempted to violate any type of information security policy, procedure or law relative to the use – misuse – of computers.” (Hackers, Crackers and Phreakers Oh My! 1998, p. 18).

Even today, hackers have been generalised as nothing other than computer criminals. This may partly be because we are in an age of information and technology, and any news regarding ‘high-tech culture’ becomes a favourite topic with the media. The general public (being all those except hackers, computer security consultants and those of the computer-savvy generation) are still computer illiterate. The media feeds upon their ignorance of the complexities of the situation, and most times the general public believe the hype.

**What is computer hacking?**

So then, what is computer hacking? Computer hacking can be conceptualised as part of the larger picture known as computer crime. Computer crimes in the past were nothing more than criminal activities conducted with the aid of a computer. Although a report by The European Committee on Crime Problems argued that “No definition is generally accepted or recognised for these terms [computer crime]” (European Committee on Crime Problems, 1990); a MSc. Course at University of Leicester has given rise to 3 common suggested “categories: computer crime, computer-related crime and computer abuse.” (Mulhall, 1996, p. 14)

It is such diverse views regarding the nature of hacking, and its dangers and legal status, that make it difficult to prosecute hackers.
However, let us take a look at some of the methods that comprise hacking and cracking and we will get a better idea of the nature of these activities. At its most basic, a ‘hacking’ is defined by Coopers and Lybrand in the Computer and Misuse Executive Briefing (1990, cited in Hoath & Mulhall (1998, p. 16) is “the process of accessing computer systems by persons who have no legitimate access to the system”.

A hacker would usually “do research and learn about systems” (Denning, 1990, p. 5). Benden (1991, as cited in Hoath & Mulhull 1998, p. 17) argues that the hacker has a “need to satisfy a limitless curiosity about data and systems ...[finally] convincing him/herself that no harm to the system was intended.” A cracker, once in, however, perpetrates computer crime. For example, trojan horses, logic bombs, data diddling, piggybacking, scavenging, deleting root, port sniffing are all crimes against computer systems perpetrated by crackers. Their objectives might be political, vengeance, purely mischief or even as a challenge between two rival factions of hackers, but the outcomes can lead to mayhem. (Blatchford, 1998, p. 16)

Past cases of hacking

“The ‘original hackers’ learnt in a mainframe environment with extremely powerful computers that required a great understanding of the system and knowledge of lower level programming and the inner-most workings of the computer system. Hackers of the past had a much different environment to work in which differs greatly from today. They were a small population aware that they were on the verge of major technological and programming breakthroughs, were members of a small elite and they recognized that they were part of a select few to understand this type of knowledge. “In their opinion, to be deemed a computer hacker is [sic] an honor and great prestige accompanies [sic] this designation.”(Marion, 1999)

The above paragraph represents the shared values that the ‘old guard’ of hackers saw themselves as holding. In an interview with de la Cruz, (n.d.), a hacker from the old guard going by the handle ‘skie’ griped saying: “back in the day we were truly elite. there [sic] was only a handful of us in the world. the [sic] old-school hackers
had real pride, integrity, respect, and most of all skills.” When asked what he thought of the freshmen hackers, he denounced them saying, “there are no hackers today. today's [sic] "hacker" scene is full of ignorant [expletive deleted] who don't have a clue what they are doing” and “they're ruining it for everyone. they [sic] are turning off all the potentially elite hackers.” It is true; however, that the amount of technological skill needed to “hack” has decreased considerably. It’s no longer an elitist club, as computer security expert, Rob Clyde (cited in Christensen, 1999, p.4) argues, “You no longer have to have knowledge, you just have to have the time. You just download the tools and the programs ... click on a button and send bombs to your network, and the systems will go down.”

Most computer hacking cases that are reported in the media are however, of the larger, more notorious crimes, and not of the variety such as the one mentioned above. Well-publicised hacker crackdowns included:

- “Prophet”, a hacker who hacked BellSouth telecom and copied a document that, dealt with the Emergency 911 plan, in 1988. (Sterling, 1992, p.116)


- “Data Stream”, a teenage hacker who installed sniffer programs in Rome Laboratory’s Air Development Center in USA, and then proceeded to hack 100 other systems from information he received from the sniffers, in 1994. (McKenna, 1999, p.1)


- Kevin Mitnick, who phreaked and hacked his way into phone companies, government computers, software company networks all over the USA in 1995. (Reen, 1995, p.2)

Other famous names amongst the hacker underground that have been apprehended include Robert T. Morris, “Phiber Optik”, “Erik Bloodaxe”, “Electron”, “Pax” and “Anthrax”. Most are no longer
part of the hacker culture, but there are some that still remain. Computer science instructor, Lawrence G. Page, says, "It is agreed that there are many more hackers out there, than actually get caught." (Kinne, 1989, p.2) Deen (1995, p.2) further illustrates, "It is hard to find pure true hackers because if they are such they are not news makers because they do not do anything with drastic consequences. The best true hackers no one knows about, because they are good enough to evade detection and do nothing to cause a problem that would point to their existence."

The spread of computer hacking and why it will continue

Although we have heard such skepticism as: "It is difficult to tell if the number of hackers are increasing due to hacking being the new sport, or if the number of hackers, from a ratio perspective, is staying about the same as the number of new Internet hosts and Web sites coming online." (Hackers, Crackers and Phreakers Oh My! 1999, p.18) – the truth is, I believe hacking will evolve and thrive.

Reports detailing the steady increase in computer hacking crimes around the world include Singapore where "A Government spokesman said that between 1993 and 1995, there were three reported computer crime cases, all related to cloning of mobile phones. But in 1996, there were 14 cases; two were related to computer hacking and four were unauthorized access. Last year, the number of cases increased to 39." (Rees, 1998, p.2), and the UK where "45% of organizations now suffer from computer fraud and abuse – up from 36% three years ago." (Computer Security and Fraud, 1998). Further indication comes from Sterling (1992, p.51) when he comments that "Phone-phreaking as a social practice is still very much alive at this moment. Today, phone-phreaking is thriving much more vigorously than the better-known and worse-feared practice of 'computer hacking'".

As for the predicament of computer hacking and the hacker lifestyle for the future, these include reports from Hollinger, Lanza-Kaduce (cited in Denning, 1990, p.8) speculating, "that hacking may be
encouraged during the process of becoming computer literate." As we head into the new millennium, there will be many more people who will start to take computer courses, get involved in I.T., and invariably, encounter computers and hacking. The spread of hackers will reach new countries, new boundaries. As soon as people come in touch with computers, and governments become more reliant on technology, motives will arise such that hacking will be the only outlet, most notably where hackers are likely to hack a system to prove that they are in control and more superior than the technology. As US Air Force Office of Special Investigations (OSI) agent Nesbitt (cited in McKenna, 1999, p.5) puts it, "Today's generation is being raised on computers ... Add to that faster computers and faster modems, which allow computer crooks to haul their stolen goods to their lair within minutes ... more hacker tools are now automated, and publicly posted for all to download. This lets users with little skill - called lamers - to trash and crash computer systems."

Information is the new source of wealth and power (Blatchford, 1988, p.17), as most hackers believe, and the "computer underground is an invisible community with a complex and interconnected culture, dependent for survival on information sharing, norms of reciprocity, sophisticated socialization rituals, and an explicit value system." (Meyer & Thomas, 1990) There are simply too many opportunities presenting themselves. More complex software programs will mean more loopholes and bugs for hackers to exploit. With more companies wanting to become "connected", they will neglect security and controls in return for getting "connected" quickly. These factors, will be over and above the current ones, such as the "concept of eliteness [and] peer recognition" (Hoath and Mulhall, 1998, p.19), greed, boredom and of course, the hacker ethic.

It is also noteworthy that governments are aware of the trend. CNNInteractive reported in January 1999 that President Clinton announced "a $1.46 billion initiative to deal with U.S. government security - a 40 percent increase over fiscal 1998 spending." (Christensen, 1999, p.3) In Asia, "the Singapore Government has increased penalties for computer crimes while spelling out new forms of computer-related offences under amendments to its Computer Misuse Act." (Rees, 1998, p.2)
The future of hacking

For the foreseeable future, hackers will still be finding new bugs or new methods to exploit. One example is the “Denial of service attack” (Computer Fraud and Security, 1996, p.3). Corporate companies might actually employ hackers to cripple their rival companies. Competitive rivalry will be taken to a new level. Industrial espionage will give way to industrial sabotage and information terrorism. No longer will it be sufficient to misappropriate proprietary data and intellectual property, but it will possibly be held for ransom. Worse yet, deliberate distribution of misinformation without companies knowing will cause chaos the likes, which we have never seen before.

Hordes of aspiring new hackers will appear on the scene, ready to fill the ranks left bare by the old guard of hackers who have “outgrown” their passion. Most of these new hackers will have little or no knowledge of the intricate technicalities of the systems that they are hacking. They will merely be downloading compiled programs with instructions telling them how to exploit known security bugs. It will all be “point and click”. The command line interface seen on Unix, Linux, and their variant machines will be strange territory to them. These will form the bulk of the new generation hackers, and their skills may not even enable them to realise the damage they are causing to a system. Their ambition to break the code is fuelled by ever increasing media coverage on computer hackers being hunted down by the law. The hacker ethic will slowly become a thing of the past, only to be uncovered by a few. With their aims only to obtain the necessary tools and to hack into systems fulfilled, even fewer of the new generation of hackers will actually adopt it.

The other part of the new generation hackers will be the elitist. Some of them might be ex-convicted hackers, now employed by commercial companies – companies they used to hack themselves. (Computer Fraud and Security, 1995, p.4). Yet some others, who do not succeed in getting a job offer, will pit their skills against other hackers, rather than machines.

Regardless of change, hackers will get smarter, and so will the security people tracking them down. The entire hacker culture will not disappear, but will instead; take on a new twist – more “clueless”
hackers. The irony of it all will be, the “clueless” hackers causing more trouble, due to their sheer numbers. However, once they get a hold of the basics of hacking, they will (as will everyone in the technological age) learn extremely fast and become “experts” at their task.

Conclusion

While there were only quotes, and not much in terms of studies or statistics released on the levels of computer hacking, it was the plethora of information and various references allowed me to reach a firm conclusion that the computer hacking scene and culture is very much alive today. To avoid solely relying on my subjective inference, I hope that the varied range and accuracy of the sources, ranging from computer security experts to the hackers themselves, are enough to indicate that computer hacking is truly well and alive. The computer hacker of today might not be the exact replica of yesterday or tomorrow, but he or she will still be hacking. I end with a passage, which in more ways than one seem to foretell the future, from Suelette Dreyfus’ Underground: Tales of Hacking, Madness and Obsession on the Electronic Frontier,

“Most of all, they know how to think outside the box. This is not a flaw. Often it is a valuable trait – and one which pushes society forward into new frontiers. The question shouldn’t be whether we want to crush it but how we should steer it in a different direction.”
(Dreyfus, 1997, p.454)

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Swamps R Us:  
The rebirth and reappearance of wetlands in Perth.

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I recall time when helping my parents with the gardening. They would mow, prune, dig, chop the backyard, taming the growth, removing the unnecessary, the defunct and superfluous. We three kids would help carry the prunings and waste to the trailer. When it was full of clippings and other household rubbish we (the boys) were in the car and off to the dump, the best place in the world. Fossicking among the plastic bags and lost shopping trolleys, we would come across gems: a dented matchbox car, rusted bike parts, tennis balls, cracked frisbees, whole piles of brown and green glass bottles that satisfyingly exploded when bricks were thrown; the cast-offs from other people's backyards. Then, eventually and inevitably we would tread, no bare feet allowed, on a seemingly stable mound of earth, to have warm fermenting grass spew forth from a hidden garbage bag, coating shoes and legs in black sludge. The dump was great. A place where it was likely and legitimate to get filthy, and stink for the rest of the day. The windows were always wound down, and the footy or cricket blaring on the short drive home for remonstration from Mum.

The dump we went to was Bibra Lake, then on the suburban periphery, now deep suburbia. Dodging the front end loaders and heavy compaction rollers, Dad would manoeuvre the trailer, dodging the few straggly paperbark trees, expertly reversing close to the edge of the lake. Indiscriminate dumping, shrub prunings were mixed with car batteries, plastics, metals in a steaming pile of loss of utility and putrescence. That this was a fresh water lake and its place as ecological habitat only occurred to me when feeding the swans and ducks, and being fed on by mosquitoes and midges at social barbecues held on the grass on the west side of the lake.
Perth has a shameful record for wetland preservation. The exact amount is difficult to determine, seasonal damplands did not lend themselves to the precise requirements of cartographers, swamp margins always changing over time and space. Bekle and Gentilli (1993) suggest 75 per cent of wetlands have been lost, Giblett (1996, pp. 135 -136) questions their calculations, as being based on inadequate and fallacious information, and concludes rather than seek some assessment of loss from an arbitrary baseline, that it is more pertinent to note there has been massive and continuing losses of wetlands. Since European colonisation, seasonal and permanent wetlands have been drained, filled, polluted; through design or neglect they have disappeared under the demands for profitable usage of land, such as housing, recreation, industry, agriculture, tourism, and rubbish dumps. Important for early pastoralists and graziers as fresh water during summer, they were/are important cosmological and social sites of Aboriginal habitation and custodianship (O‘Connor, Quartermaine and Bodney, 1989). Embodying evil and categorised as slimy places, prone to flooding and producing bad air, sites of disease and Aboriginal otherness, wetlands do not conform to European landscape aesthetics, psychologically justifying their removal and denigration, both from the physical landscape, but also from liminal imagining. (Giblett, 1996, p.128).

I examine the increased use of artificial and constructed wetlands that are appearing (in various forms) throughout the Perth metropolitan area using a forensic/case study approach. Critical to this is an examination of the history of the spaces of wetlands on the Swan Coastal Plain, and through that focus, examine the actions of various actors and the ways wetlands themselves have been represented and used. Wetlands are a nodal point of differing and conflicting trajectories relating to the ways humans conceive of nature, the ways human impact on and nurture (and so are nurtured by) the environment, and how these divergent discourses of nature influence the establishment and imagination of ‘sustainable’ communities. A history of the spaces of the wetlandscape may evidence a dramatic re-emphasis in the production of those spaces, particularly through an examination of cultural uses. Constructed wetlandspaces have an inherent contradictory potential that mediates human culture and imaginings of nature. Discourses of management and control of ‘nature’ and ‘community’ through surveillance and
simulation figure highly in the imagining and indeed imagineering (see Wood, 2001) of master planned communities by urban planners and architects.

In February 2000, Perth’s Swan River was closed to recreational use due to a toxic algal bloom that ‘appeared’ on the shore of the Swan near the affluent riverside western suburbs. Priding itself on the purity of the water that flows through the city nestled on the Swan’s banks, “Middle of a city and it’s clean water!” (Winton, 1987, p. 92), this came as a huge shock to the environmental and ecological sensibilities of the residents of Perth. The realisation that the city was not sitting gently on the environment, and (ab)uses of the Swan Coastal Plain were not proceeding on a sustainable basis, focussed attention towards tactics and strategies of planning and urban development, and the political, economic and social vectors and assumptions behind such strategies. Increasingly the function of the existing sewerage and drainage system has been highlighted as a major contributor to the accumulation of pollutants within the Swan-Canning catchment. Expensive suburban sewage infill programs have commenced replacing polluting septic tank systems, whilst excessive and inappropriate fertilising of suburban gardens is dissuaded through utility advertising. With increased runoff from the extensive road network, and drainage systems that quickly transfer ‘storm’water with its gravid burden of nitrogen and phosphorus into river courses highlight wetlands as crucial nodal points in the remediation of pollutants. Mediating between land and water, and being neither, constructed wetland landscape simulates pre-colonialist wetlandscape, without contemporary indigenous agency, subordinated to the demands for the removal of the waste products of modernity.

State Government agencies and Local Government empowered to address this problem endorse the usage of constructed and natural wetlands as public open space and stormwater mediation in suburban and industrial areas. Constructed wetland techniques emphasise the use of natural materials and processes, mobilised to the cause of pollution remediation such strategies privilege discourses of reductionist science, enamoured of models and computer simulations. Changes in the management of drainage corridors to re-emphasise natural processes is promoted as proactive supervision, reducing the need for repetitive, short acting symptomatic treatment.
It seems paradoxical that a city sited on a topography of intermittent wetlands, with a history of draining and filling them, is now increasingly adopting wetlands as an engineering option to soften and filter detrimental human impact on the environment. The spatializations of emplacement, and the mobilisations of political and hegemonic assumptions hide as much as reveal through normalisation tactics. It might mean that Perth as a city is becoming more conscious of the custodial nature of human habitation in the biosphere. If so one would expect to see such reflexivity manifesting in all modes of culture. Yet ubiquitously, attempts to emphasise the ecologically unsustainable impacts of urban planning, industry, transport are quickly condemned and marginalised through political processes as hindering the competitiveness of individual enterprise.

The type of wetlands being used to accommodate stormwater runoff conform to certain engineering design criteria first and foremost, to prevent property loss or damage due to flood. Aesthetic criteria, sight, smell, acceptable human use (which as a social construct changes over time and space) conform to a British gentleman’s park standard of a designed randomness. Created by the enclosure of commons, reflecting the vectors of bourgeois power, such landscape made “Nature move to an arranged design...[that of]...production, where tenants and labourers will work, while in the other case it is being organised for consumption - the view” (Williams, 1973/1985, p. 124).

I argue that current urban development mobilises constructed wetlands to blur and obfuscate the obvious impacts of modernity, by filtering and transforming wastes and pollution through a constructed or rehabilitated nature as an imaginary recycling centre, and further valorises the modernising project. That these structures are also appearing at the core of walled enclave suburbs, constantly reaffirms current landuse policies and discourse relating to ‘sustainable’ use. Surveillance and discipline of these structures and water is implicit. Such is the nature of their design, their malleability and fluidity of form and function, demanding control, a creation with tendencies to wildness and deviation from norms, the unforeseen, unmodelled, and unimagined occurrences that obligate continuing monitoring and self justification.
Imagining a continuum of constructed wetland types provides an ecological focus either for ecological restoration of degraded wetlands or the construction of new types with natural wetlands as a guide and template. Natural wetlands in the context of Perth are those presented to colonising forces, designed, used and imagined through indigenous technology and belief systems, in doing so relegates and marginalises indigenous claims for reconciliation and self-determination.

Landscape as a category, mediates self conception and self presentation, a representation of how we wish to appear in social and economic status and hierarchy by demonstrating our mastery, control and knowledge of the landscape and its components. Raymond Williams states “The ‘modern’ world, both in its suffering and, crucially, in its protest against suffering, is mediated by reference to a lost condition imagined out of landscape and a selective observation and memory.” (Williams, 1973 / 1985, p. 180).

This nostalgic emotion is apparent in the master planned community of Ellenbrook. A nostalgia that establishes and presupposes a desire for a ‘time’ when things were safer, when everyone knew each other, English villagibility transplanted and translated into designed livable communities based on a community within 5 minutes walk to the commercial centre. Created from the ‘apparent’ dysfunction of alternate urban forms, livable communities aims to reduce ‘dependency on private vehicles and are more energy efficient’ (Western Australian Planning Commission, 2001, p. 4). Despite the supposed walkability of design, productive (paid) work is elsewhere, cars are essential for the population of Ellenbrook to continue to live there, situated as it is 25 kilometres from the central business district of the metropolis. Road hierarchies privilege the private space of the car, public transport is infrequent and intermittent.

Sustainability of use is intertwined with notions of development, still a moot point in terms of green or natural economics.

Villages in Ellenbrook are constructed on permanent lakes. Lakes created in suburban and urban redevelopment estates do not conform aesthetically nor in an hydrological engineering paradigm to the wetlands existing prior to European colonisation. Water views denote presumptuous privilege, a prospect of mastery over a
tameable and beneficent nature. Classifying these lakes as permanent is in itself a presumptuous act. Permanent on which timescale and according to which belief system?

Ellenbrook, was named by the property developer and the Colony’s first Governor, James Stirling. Stirling’s actions reflected his need to promote and naturalise an alien landscape for his financial backers in England. Mapping and naming anchored the landscape in ways of imagining that encouraged private development; the Swan River Colony was to be a privately funded venture, not dependant upon the British purse as were New South Wales and Van Dieman’s Land. “The Government liked the sound of this - a Crown colony developed by private funds, as Pennsylvania has been by William Penn and Georgia by Colonel Oglethorpe” (Hughes, 1988, p. 574).

Landscape painting was a tactic of offering truths about nature, showing it to be a worked landscape, always without workers present. Early pictorial landscape representations of the Swan River Colony acted as picture postcards (Giblett, 1996, p. 129) and advertising, “making the products of culture appear to be the work of nature, and in turn, seeing this ‘naturalisation’ as an ideological and semiotic process, one which is repeated and reaffirmed in traditional art historical accounts of landscape painting.” (Bermingham, 1994, p. 237). Stirling’s written descriptions of the Swan River Colony offered an easily pastured and cleared landscape suitable for the establishment of a landed gentry.

Giblett paraphrases Williams discussing Jane Austen and states: “the land is seen primarily as an index of revenue and position, its visible order and control are a valued product, whilst the process of working it is hardly seen at all” (Giblett, n.d., p. 146). Reproductions in the landscape painting aesthetic reflect this process, mass production of images removing the quality of singularity present in an image, “rendering it schematic and quickly identifiable, so that it resembles a sign...a command” (Hughes, 1980, p. 325).

I extend this process of artistic and imaginative naturalisation presented by landscape artists to the planned urban form, the creation of ‘livable’ communities which have as their core, representations of constructed wetlandscape replacing indigenous wetlands with alien European landscape conceptions. Simultaneously marginalising and silencing the resident, the consumer and the citizen. These same
wetland designs rely on hermeneutic monopolies of knowledge and discourse that correspondingly privilege the geologist, the civil engineer, the chemist, the limnologist, the landscape architect, the urban planner amongst others. These professionals may produce, evaluate and promote these suburban forms but not consume them, for they live elsewhere. Indigenous wetlands are denigrated, mirroring the space occupied by Aboriginal peoples in Perth, (self)marginalised and alienated.

Constructed wetlands are defined as:

purpose built structures, utilising the predominantly natural materials of soil, water and biota, which perform the desired physical, chemical and biological processes and functions of natural wetlands to achieve desired objectives (Department of Land and Water Conservation, 1998, p. 16).

Constructed wetlands demand an ongoing monitoring process. Evidence of breakdown; flooding, clogging, smelling, illegal dumping of rubbish, is subject to constant reductionist surveillance. This observation and discipline acts on the network of drainage channels, ponds, lakes, swamps throughout the metropolitan area, by digital systems of communication, by regular rounds of maintenance, spraying for weeds, removal of exotics weeds by digger, by community group and ‘work-for-the-dole’ volunteers.

Following from Bourdieu cited in Bermingham (1994, p. 245) nature is redefined so that it mirrors society and thence society is redefined according to this hybrid nature in a never ending circle of self-justification. Tradition is experienced as the ‘natural world’ and taken for granted through the instrumentality of bourgeois hegemony:

Gardens, with their naturalized plantings and earthworks, nature became the sign of property and property became the sign of nature. In short, what was new and artificial presented itself under the guise of the established and natural. Thus the economic transformation of nature came to stand for nature itself, and this “nature” in turn was able to legitimate the economic order (Bermingham, 1994, p. 249).
Nature then becomes something quantifiable and manageable by professionals. The meteorologist imagines climate, the hydrologist imagines water flow, the civil engineer imagines physical structures and/or processes that borrow from examples established in nature, to prevent economic loss and as a side effect create wildlife habitat. Modelling and simulation then prefigure possibilities for reconstruction. This sequence reiterates globally, from the suburbs of Perth and Las Vegas (www.lvwash.org/wetlands), to the rehabilitated sites of now uneconomic mining (Nicholls & Doyle, 1992, pp. 23 - 28), the logic and assumptions of a 'better nature by design' act in vectors and trajectories of power that assume and presume predictability and risk management.

Cases are legion where the empirical approach to a given process refuses to carry its description to a conceptual level where a dialectual (conflictual) dynamic is likely to emerge. For example, countries in the throes of rapid development blithely destroy historic spaces - houses, palace, military or civil structures. If advantage or profit is to be found in it, then the old is swept away. Later, however, perhaps towards the end of the period of accelerated growth, these same countries are liable to discover how such spaces may be pressed into the service of cultural consumption, of 'culture itself' and on the tourism and leisure industries with their almost limitless prospects. When this happens, anything that they had merrily demolished during the belle epoque is reconstituted at great expense. Where destruction has not been complete, 'renovation' becomes the order of the day, or imitation, or replication or neo-this or neo-that. In any case, what had been annihilated in the earlier frenzy of growth now becomes an object of adoration. And former objects of utility now pass for rare and precious works of art (Lefebvre, 1997, p. 143).

Current Western Australian Government policies describe bushland and wetland conservation as fulfilling a moral obligation to protect habitat from destruction and save species from extinction, as well as providing for:

- education, heritage, tourism, scientific and medical research
- [...] waterways protection, microclimate control,
biological control of pests and diseases, visual amenity, and places for quiet contemplation, relaxation and a sense of place. Every city needs its natural spaces: they are impossible to replace once lost (WAPC, 2000, p. vii).

By acknowledging bushland and wetland have been degraded, rehabilitation further blurs the what is natural, what is cultural, creating nostalgia for the loss and threat to nature and biodiversity.

The explicit desire of planners, to create 'livable communities' mobilises fluid mediated conceptions of nature, present at the core of their enclave estates, to justify their lust for safe, tidy, controllable imagined communities (Anderson, 1983).

**Ellenbrook Imaginings**

An imagination of the wetlandspaces of Ellenbrook is informed by an examination of the ways in which the lakes and residences are integrated into the Ellenbrook subdivision plan, and the ways in which the residents are to use those spaces. The Bridges subdivision was recently named the best residential subdivision in Australia as voted by the Urban Design Institute of Australia, (Magnus, 2001) planners patting themselves on the back. Neatly maintained, carpet-smooth verdant grass verges meet the roadways that meander through the flat topography. The lake is at the private residences’ back doors, an extension of the private space of the home backyard into a shared space of nature, everyone’s backyard.

This permits the scopic consumption of controlled and constrained water, and connotes mastery and socio-economic status. The lake acts as an evaporative airconditioner for the suburb, many kilometres from the cooling coastal breezes that wash over the coastal plain during summer. Dry easterlies are cooled by its surface, yet most residents rely on their own electrically powered systems for cooling. Further from the lake, temperatures rise as the baking sun shimmers the air over the roads and paths, airconditioners gently hum in unison, exchanging hot for cool air in single cell systems of private space. During cooler rainy weather, the lake collects stormwater. The lake lacks a fecund odour, chlorination of the lake water sterilizes biodiversity. The flavour and colour of the water from the bore pipe filling the lake suggest scopic aesthetics rather than a habitat for wildlife. Birds (first nature) are rare here, no space for
nesting, courting, grooming; they are chased/hunted by the residents’ dogs (second nature) being exercised. The post (third nature?) that held the dog litter bags was stolen before the concrete set, turds bleach the grass, attracting flies and decay, the only fragrances of nature present.

Swimming, fishing and boating are prohibited, by remote and absent order. A sign speaks the edict to the carpark. Use is constrained solely to the land that bounds the lake, the lawn and the playground, the small island in the middle has benches for passive observation of this sterile environment. A small scratched plastic plaque dedicates a pioneering pine planter, four *Pinus radiata* stand in mute remembrance of the previous land use of the area. The wetlands that preceded are not acknowledged, save for the rigidly geometric plantings of *Baumea articulata* and *Juncus species* on the lake margin. Boardwalks connect the lake to the shore, street art provides mental diversions; cast iron ‘driftwood’ leads to a Tuscan marble arch, unwitting parallel to the triumphal arch on the site of the Tyburn gallows in London. Commissioned pavement art suggest ways of interpreting the lake space and environs.

The lake is accounted for as public space. Walking along the footpath that rings the lake, one is both in public and private space, slightly lower than the backyards, an observer and observed. The back fences are low, and open, blurring the distinction between the two spaces, both defending space and permitting the gaze of the flâneur. One is forced to imagine the ownership of the landscape incorporated in the placement of residences, however I am conscious of my penetrating glance; viewing their backyards, their clean and drying washing, their barbecues and outdoor furniture; through their large glass windows their living areas, their music, their TV viewing. They are on display (and know it?) in their once-display homes, for my wandering gaze, curiosity and voyeurism.

Visibility is essential for the exercise of power. This awareness and openness to gaze is reinforced by the Italianate panoptic observation tower that occupies the centre of the public open space. Up four flights of stairs, the Bridges are available for consumption. Panoptic views of suburbia permit voyeuristic intention, much the way reality television permits observation without one’s own habits and behaviours (other than being a voyeur) being observed. This tower
fulfils Bentham’s desire for the architectural embodiment of psychological power that is both visible and unverifiable. “Visible: the inmate will constantly have before his eyes the tall outline of the central tower from which he is spied upon. Unverifiable: the inmate must never know whether he is being looked at any one moment; but he must be sure that he may always be so” (Foucault, 1977, p. 201). Foucault explains that this power relation acted on the subject of visibility. The occupier of the tower could be anyone able to climb the stairs and tall enough to look out over the parapet, perhaps with binoculars, it could even be the resident if the inclination was there to examine her neighbours. The subject “assumes responsibility for the constraints of power, he makes them play spontaneously upon himself; he inscribes in himself the power relation in which he simultaneously plays both roles; he becomes the principle [sic principal?] of his own subjection” (Foucault, 1977, p.202 - 3).

Yet in the centre of this power relation, (the tower’s observation deck), resistance to this relation is apparent. Graffiti is rife, tagging (‘territorial pissings?’) temporarily voices disaffection and alienation with the planned livable perfection of this suburb. Temporarily, as the local ratepayers association has a graffiti taskforce dedicated to the removal of all unauthorised street art from the beige uniformity. Those that observe the lake and environs from the tower are caged by vertical bars that emphasise the nature of the prison, to observe is to reinforce the nature of the power relation. The observer has to leave before six o’clock, lest be locked in for the evening, night; light goes with the sun, time for darkness cloaked transgression.

Aboriginal imaginings

Wetlands are endemic and immanent in Perth. Everywhere the traces of lakes, brooks, creeks and swamps are extant. A short selection of significant spaces in Perth reveals a history of wetlands that have been written over by the colonising culture. A palimpsest of numerous overwriting, and partial erasure. The Narrows interchange and the Freeway, the Esplanade and Barrack St Jetty (with Bell Tower and constructed wetland), and the remnant chain of lakes in parkland setting to the north of the Perth townsite that have disappeared under expanding suburbia.
There is the triumph of engineering and dewatering in the recently completed Graham Farmer Freeway, travelling as it does along a pre-existing route of wetlands and swamps to the north of the Perth townsite. When residents of North Perth and Northbridge complained about ground movement due to dewatering, they were met with refutation and scraps of compensation from Government, their legal struggle continues as does Aboriginal resistance. The eastern exit of the Farmer Freeway has been daubed with an Aboriginal style mural of the Waughal, serpent creator spirit of Aboriginal dreaming. The Waughal is not merely a totemic or spiritual concept, but “an essential figure of the vital force of running water” (Webb, 1996, p. 66), emphasising physical and spiritual inter-relatedness over time and space. The Waughal idea is crucial to an understanding of Aboriginal conception of ‘country’ and custodianship and stewardship:

It is not any sort of exaggeration to say then that Country (whether wetland or otherwise—indeed they are all conjoined) is the difference between life and death for Aboriginal people. And it is no wonder that any non-Aboriginal intervention into the ‘balance’ of Country is viewed with suspicion as a potentially destructive force (Webb, 1996, pp. 66-67).

Street art somehow mediates this obvious and jarringly cynical iconographic use. Aboriginal resistance to wetland (country) destruction invokes the Waughal, spurns cynical European rejection for its ‘overuse’, and yet here it is mobilised as a token of acknowledgment. To the north of the Freeway, which was named after an Aboriginal footballer of some repute, a small constructed wetland takes flow from the road surface, before leading to the river.

Kevin Keefe discusses two major themes of Aboriginality; being Aboriginality-as-persistence, characterised by an inherently unique identity, a stable and fixed continuation of traditional cultural practices that are commonly shared across all Aboriginal peoples and which currently dominates the Aboriginal Studies curriculum. A second theme contrasts as Aboriginality-as-resistance which is a dynamic and living set of oppositional practices that are in constant interaction with the dominant non-Aboriginal society. This latter is characterised by resistance to non-Aboriginal authority and oppositional stances in key cultural and political areas. These two
themes are constantly invoked when discussing Aboriginality, evidenced by “the fact that the persistence of the Aboriginal people, as an identifiable social and cultural group, is in large part due to their successful and continuing resistance” (Keefe, 1992, pp. 45 - 47). The oppositions of resistance / persistence, race / culture, inherited / learned, active / passive show the element of Aboriginality to be inherently contradictory within the hegemony of coloniser culture (Keefe, 1992, p. 59).

Such a contradictory notion is difficult to uniformly apply to Aboriginal cultural forms, without suppressing the terrible stories of post-colonial Aboriginal / European interaction. By associating Aboriginal culture with Nature, it can be seen as a “response to what is seen to be the failure of masculinist and rationalist (read capitalist) ways of seeing, knowing and being in the world” (Jacobs, 1996, p. 137). It can also be seen as an association with Aborigines and Nature as Female, thereby placing Aborigines outside civilisation, and necessitating ‘an authentic otherness’ in modernity’s quest for an ecologically sustainable future. “Aborigines who slip outside of, or choose not to engage in primitivist stereotypes of their culture, have an uncertain place in this journey to a new planet” (Jacobs, 1996, pp. 137 - 8).

Jacobs cites Jennifer Craik and argues:

Tourism ventures based on re-presentations of indigenous cultures establish certain sets of relations, such as voyeurism and extractive commodification, which ‘mimic colonialism’. Indeed there is a growing acceptance that consumption-based industries like tourism are the face of contemporary colonialism, a form of neo-colonialism. (Jacobs, 1996, p. 136).

Creation of new wetlands spaces by colonisers concerned with their overriding fear of flooding, property loss, malaria, disease, untamed wildness; cannot replicate Aboriginal cultural imaginings of wetlands spaces. Instead, they invoke pastiche and postmodern hybridity to imagineer a ready made commodified nostalgic tradition, bereft of nature, of authenticity, without connection with the biosphere. Mathematical models cannot hope to replicate and
mimic the design complexity of a cultural landscape of sixty thousand years.

**Planning Imaginings**

As heirs to a less meditative Enlightenment tradition and now the captives of a global news media, the West may instead be ‘precessing’ (Baudrillard, 1983) into unsustainable modes. We may be at the risk of confusing ecological simulacram with the real-thing, a declining biosphere…negative images of nature diminish into the euphoria of ecotourism and the hypernature of artificial simulations as just one set of possibilities among a number of potentially profitable virtual environments (Jagtenberg & McKie, 1997, pp. 23 -26).

Urban water management is of importance in the urban environment, particularly where “well-drained higher lands have already been developed and new development is now focussing on lower, wetter land. Development of this land will often need to designate substantial areas to water management” (WAPC, 2000, p. 67). Having now built out the heights, previously less valued landscape on the city’s periphery is being reappraised with the benefit of water sensitive design, facilitating the production of suburban village landscapes. Ellenbrook is one example where wetlands areas have been used for agriculture/silviculture and are now being remediated and reproduced for residential use. Wetlands that previously have been used for market gardening are now being recycled through the use of massive dewatering and drainage projects, and always at the core of these spaces, planners invoke some form of European aesthetic lake centrepiece.

A personal observation (and an aside) relates to hermeneutic disciplinarity, and the relation of centres of higher education and their placement throughout the Perth metropolitan area. Seen through the focus of a history of spaces, and landuse procession, the four universities have been placed either in former pine plantations which were previously seasonal damlands (Edith Cowan University Mt Lawley and Joondalup, Curtin University and Murdoch University) or estuarine damlands (University of WA). Interesting to note is the architectural usage of water features (constructed wetlands) on all campuses, and the way they can be read for the roles
they play in the imagining of the university ethos. This is particularly pertinent as Edith Cowan University wrestle with aesthetisation proposals for a stormwater sump at the heart of the Joondalup Campus.

Urban planning emphasises location and placement of facilities and utilities. Where drainage and open space purposes can be combined, the developer may receive a concession to reduce the proportion of public open space by 2% of the gross subdivisable area (WAPC, 2000, p. 61). This represents a direct public subsidy to the urban developer. By reducing the provision for public open space in combination with drainage function and enabling a greater number of lots in a given site, gives the developer greater profitability. Critical to the provision of public open space is the requirement for personal and property surveillance “to minimise potential problems... by bounding public open spaces with streets and ensuring adjacent lots overlook open spaces... include(ing) provision for lighting” (WAPC, 2000, p. 65).

Objectives of water management include: preventing flood damage; containing nuisance flow; controlling stormwater quantity and quality; providing for multiple use systems; ensuring discharge does not degrade surface or groundwater aquifers; maximising onsite storage; avoiding adverse alteration to water balance and groundwater depth; minimising disturbance by draining or filling natural streams or wetlands; and providing for economic maintenance of the urban water management system (WAPC, 2000, p.68).

By emphasising human cultural uses of the landscape through the planning process, nature becomes another commodified resource, a backdrop or stage upon which humans act. Biophysical processes become the subject of human control and manipulation.

**Constructing wetlands**

Nature is distinguished from its other, culture or human impacts. Essentialised Nature is threatening and wild and subject to analysis in reductionist fields of knowledge. Nature in a residential enclave is an idealised approximation, with multiple functions of passive and active recreation, shared public open space and surveillance being
privileged. The unpredictability of natural processes is viewed as threat, importance of habitat for wildlife is viewed as tourism opportunity, profitability of visual commodity foremost. These opportunities are forced by the function of residential estate as being another form of work and consumption. Nature is pushed into zones of conservation, wildlife corridors are also the routes of anti-social activity and the perpetual Australian summer demon of bushfire.

Crucial to these displays of 'when nature goes bad' is the desire for homely and non-threatening depictions of nature. Public open spaces become the extension of the backyard, harnessed and naturalised to reflect our self-image. Wildness can be tamed and desavaged, where this control mechanism breaks down, through bushfire, through algal blooms, by way of flooding or explosive feral growth, demands from a mediated public for controlled burning or greater monitoring of waterways and wild places re-emphasise the difficulty in modelling chaos.

Constructed wetlands of the kind imagined by the WA Planning Commission are a poor substitute for the indigenous wetlands that were presented to James Stirling on his arrival with his hapless shareholders. The lushness and fecundity of wetlands was a crucial factor in their importance in Aboriginal imaginings of these spaces, whilst also remaining a signifier of Aboriginality through their location on the margins of the town and then the city. The same category of immanent fertility is denied in a European landscape aesthetics, dumping of wastes, filling draining and polluting of wetlands proceed apace. Only to be replaced with simulations of what was before, estimations and approximations of diversity provide scopic satisfaction, yet ultimately disappoint in their earnestness.

The realisation that Perth's modern landscape usage is finite and subject to social and economic limits is with us now. Constructed wetlands are the embodiment of studies of biophysical and ecological system flows, mediating between unsustainable landscape interaction and ecological consciousness. By examining the liminal spaces of such constructions, their underlying assumptions of social, political and economic power, and the constrained ways in which they are realised and conceived through landscape and through
media, reveal the extent to which modernity imposes limits to expression and conception across time and space.

Wetland spaces are now being valued for their importance as ecological components within human and non-human interactions, negotiations and articulations. Bibra Lake is now a wetland with certain governmentally sanctioned ecological protections, yet wildlife corridors to nearby North Lake are threatened by the extension of a major six lane highway, splitting the two lakes and threatening a new round of pollution. Yet still, wetlands are threatened with filling for hygienic reasons despite governmental demands they be preserved. Wetlands that deviate from the norm and provide habitat for unsavoury pests and smells, are doing so due to human processes and human uses of those wetlands. Symptomatic treatment with pesticides, herbicides, dyes and mechanical intervention in the expensive short term, is the highly visible prescription for such deviancy. Filling and draining is the embarrassed reaction to the failure of landscape construction and understanding, such a lack of imagination is an environmental and social disgrace.

Williams (1973 / 85, pp. 295 - 296) paraphrases Wordsworth, that when threatened by a world of strangers, humans retreat for security in either deep subjectivity or attempt to discover a sense of community in a world of signs and messages of the global village. “For in its main uses it is a form of unevenly shared consciousness of persistently external events.” Retreating into nostalgia behind the walls of their enclave, with the knowledge the lake there is been managed. Such consciousness is inherent in the dominant mode of production which constantly uses strategies of normalisation of nature and culture to reveal and conceal.

Constructed wetlands provide a paradoxical example. Variable in purpose and intention, they continue a landscape tradition with its roots in an Enlightenment tradition, either through suburban presentations of bourgeois perfection in prosaic design, or through the rehabilitation of the few examples of wetlands that remain.

It is important for processes of reconciliation with Aboriginal peoples that mediated presentations of landscape reflect not merely
European conceptions of mastery over the environment but also indigenous climate, water flows, habitat, land use and imagining.

References


Live from the Ministry of Truth
How “real” are reality soaps?

Lawrence David Loch Hill

Introduction

Reporting from the recent Mip TV trade show in Cannes, Variety quoted the Paris-based Eurodata TV research organization on the “huge impact” that reality programming is having on television schedules around the world, with Survivor and Big Brother among the top ten shows in five out of the 55 countries surveyed last year. (James 2001)

Programs such as Survivor, Big Brother, Popstars and Temptation Island have arrived at a new formula for television entertainment by looking at the results of an experiment initiated by the production company. Analysts at Eurodata TV have described these shows as “psycho-games” or “reality soaps”. (eurodatatv.com 2001) Part gladiatorial combat, part soap opera, part ‘fly on the wall’ documentary, this new format employs the principle of elimination (either by voting or according to the contestants’ performances) to provoke socio-emotional dramas and betrayals between people that are ‘real’, even if everything else is highly contrived.

In examining some of the reasons for the success of this relatively new genre, I suggest that it marks a return to one of the earliest paradigms of broadcast television - “liveness”. Live television promises participation – somewhere else (but also in my lounge room), something is happening ... and thanks to the omnipresent perspective offered by television I can be part of it, sometimes with a better view than if I were really there. It offers a relatively unmediated view of a real event, which is about non-actors in an unscripted situation.
Reality programming is clearly not "live" in any technical sense. However, my contention is that reality soaps are dangling similar carrots before their audiences. They are characterised by their 'unpredictability' and lack of editorial control, and audiences choosing to consume them do so 'as if' live (i.e. when broadcast, or with only a short delay if taped at home.) This is because a significant part of the viewer's pleasure appears to be coming from participation in lively post mortem discussions on the web, at work or in leisure based meeting places around the country.

**Origins**

Reality television began to appear as a distinctive genre in the late eighties, and writers such as Kilborn defined it in terms of lightweight video recording equipment being used to capture events in the lives of individuals or groups, which are then edited and repackaged into a television program "which can be promoted on the strength of its 'reality' credentials." (Kilborn 1994, p. 421)

He identifies two factors in the rise of this kind of programming: It is relatively inexpensive to produce, and it has been made possible by the widespread introduction of cheap, lightweight cameras which can record broadcast quality images even in low level lighting conditions. Although the cameras are sometimes in the hands of amateurs, "the control over what gets shown and how it is presented resides firmly in the hands of professional television personnel." (Ibid, p. 437)

This control is employed to tell stories in such a way that "tensions are built and climaxes reached in a manner that is more akin to the narratives of popular TV drama ... fast editing, pulsating mood music and other tension-building devices - are also employed, all calculated to heighten the sense of dramatic involvement." (Ibid, p. 432) Kilborn emphasises that the entertainment value of these shows is an overriding concern for their producers, and the need to generate excitement by ensuring visual interest, pace, and even an element of voyeurism in some programmes has given rise to the charge that this is a form of 'tabloid television.'

A widely anticipated writers and actors strike has seen Hollywood producers rushing to complete existing projects while TV networks
are looking to get more reality shows into production because they are unscripted and use non-actors. Some writers have argued that reality programming resulting largely from economic pressures. Raphael (1997) argued that the proliferation of reality television programming was a response to economic restructuring in U.S. television. Rapidly rising production costs associated with conventional production practices were squeezed by declining per-show revenues arising from changing patterns of distribution with the spread of cable, VCRs, the Fox network and local independent stations.

The resulting pressure on production budgets made reality television programming attractive because the genre largely did away with the need for expensive acting and professional union talent. Production costs could be reduced by the wholehearted embrace of low-end production values such as handheld cameras and the use of available lighting. Sets, props and costumes were often provided by the agencies profiled, further minimising costs. As a result, "Reali-TV is the only prime-time programming category which is not deficit-financed". (Raphael 1997, p. 105)

The question of realism

Arguing that modern viewers are aware that what is usually seen on television is in every sense a constructed reality, Kilborn sees a key attraction of this new kind of programming coming from its apparent ability to capture "the vibrancy and spontaneity of real-life events." (Ibid, p. 423) The authenticity of what the audience is seeing is often ‘guaranteed’ by some of the technical difficulties associated with handheld camerawork such as framing problems and temporary loss of focus.

In this, the genre appears to be drawing on some of the earliest traditions of cinema verite. Examining the history of ethnographic documentary, Hassard traces the first developments in theory and practice to the Russian filmmaker Dziga Vertov, who argued that sets, scripts and actors should be dispensed with in order to present ‘realistic’ images of everyday lives. This style of film making tried to avoid ‘judgement’ and ‘subjectivity’, with the role of the filmmaker limited to revealing ‘reality’. In its purest form there
should be no direction, no plot, no questions posed or answered, with the only permissible tools being lightweight cameras & portable sound recorders. “Decisions concerning action should rest with the subject: the film-maker merely decides whether or not to film a particular piece of action.” (Hassard 1998, p. 44)

This approach considers the camera operator to be the most important crewmember, with the success of the film resting on his or her ability to keep pace with the action. Long takes are characteristic of the style in order to give the viewer a feeling for the character and atmosphere. When it came to editing, sequences were to be cut close to the way they were actually shot, in order that the process should “... as far as possible, be ‘true to life’, rather than footage being manipulated by the editor to create a ‘new’ and essentially ‘different’ reality...” (Ibid, p. 61)

In this respect, Survivor seems to go out of its way to draw attention to the fact that it is an edited construct by employing the ‘90s cliché of speeded up vision at every possible opportunity. Clouds race across the sky, aerial shots of mazes twist onto the screen with the speed of computer graphics – on no account must the audience experience the slow passage of time characteristic of life in the outback or on a deserted island, for fear that they might become bored and the ratings drop.

In fact, the reality soaps depart from cinema verite in a number of ways. Certainly, it appears that the editors in this new genre of reality soaps highlight certain aspects of people’s behaviour for entertainment value, as part of the process of character construction. A frequent comment from ex-contestants is how “I’m not really like that” because a series of individual incidents have been strung together to exaggerated effect. In this context a comment from Richard, the “villain” who won Survivor I is illuminating:

Richard said that even though the episodes had been “edited somewhat” to portray her (Jerri) in a bad light, she deserved her reputation. “You do all of those things that you’re edited to do,” he said, “and she was evil to people.” (cbsnews.com 2001)

Contestants are questioned, and drawn into soliloquising to the camera in ways that are reminiscent of Francis Urquehardt in the BBC drama House of Cards. This privileges the audience with some fascinating discontinuities between each contestant’s view of the
action, in a manner similar to *Blind Date* or *Perfect Match*. In episode 9 of *Survivor II*, Jerri and Colby spent a day on the Barrier reef:

"I couldn't have come out here with a better person," declared Jerri. "We are having a great time and we are getting to know each other. This is basically the perfect honeymoon without the sex."

Colby had different thoughts: "I was just looking for some down time away from the game, and that's exactly what I got." (cbs.com 2001)

Earlier in the show the audience had been made privy to Colby's resentment at the thought of sharing this prize with Jerri, whom he was clearly beginning to dislike as a person, and so was placed in the same kind of privileged position often occupied by consumers of fictional narratives. In part, the format allows audiences to guess inner thoughts and then have their insights validated or otherwise by subsequent events. When the tribe subsequently voted off Jerri, the audience had been given the clues (like a whodunit) to deduce the likelihood of Colby's betrayal.

In Ang's study of the highly popular television drama *Dallas*, she used data from a viewer survey to discern an attribution of realism as a key principle of the popular aesthetic. She discussed both 'empirical realism' (likeness of setting, social action, themes) and 'classical realism' (continuity editing, classic montage etc) before dismissing them as inadequate explanations. Ang concluded that an 'emotional realism' which links the actions of the characters with the viewer's own experiences as being the most likely, "...produced by the construction of a *psychological* reality ... an 'inner realism' ... combined with an 'external unrealism'." (Ang 1985, p. 47)

Thus despite the external unrealism of shows such as *Survivor* and *Big Brother*, which are every bit as fantastic as the Ewing family's circumstances, it seems likely that the viewers are responding to what is 'real' in the situation - the contestants themselves, their interpersonal drama. That audiences are responding to reality soaps on a psychosocial level seems to be confirmed by the importance attached to the interactive possibilities:
Ever since millions of fans religiously scoured cyberspace for the last scintilla of information about the original "Survivor" series, Web sites have become a must-have for all new reality shows. (Donahue and Swanson 2001)

The evidence suggests that they have an intense curiosity about the contestants themselves, according to a report on the second Survivor series posted recently to cnn.com:

In a separate analysis prepared [by] Nielsen NetRatings (NTRT), Amber ...led the pack, with 22.9 percent of the audience scoping her out ... the highest-ranking male was Jeff ... who came in behind six women, with 17.1 percent of the audience visiting his bio page. David Katz, CBS VP of strategic planning and interactive ventures, said that he is "bowled over" by how well-trafficked the Survivor site has been, citing (from internal CBS-tracked stats) 30 million page views during the past week. (Schultz 2001)

To achieve this level of interest, the producers of reality soaps undertake an exhaustive "casting" process, designed to throw up before the viewers a cross-section of society. Nearly every demographic can find someone with whom to identify. Over the course of a series, television audiences come to know the contestants as individuals, as characters. The emotions and inter-relationships between them as they make friends and enemies are a primary focus of reality soaps, with the underlying story arc provided by the need for them to compete/co-operate with each other in order to win. Far from the most important crewmember being the camera operator, in reality soaps it is arguably the contestant selector.

**Reality soaps and voyeurism**

The dependence of this kind of programming upon non-actors raises some significant issues about the morality and ethics of putting ordinary people into situations where they reveal private, personal behaviours for the vicarious pleasure of a television audience. Placed in an unreal situation, motivated by money or fame, it defies belief that they would not act in ways that might be quite different from their ordinary behaviours in daily life.
The executive producer of *Survivor I*, in constructing a television entertainment that has all the elements of a sociological study, shows some disturbing similarities to the amoral director in Peter Weir’s *The Truman Show*. Quoted on CNN’s website, Mark Burnett even refers to it as such:

“What a great experiment: Take a diverse group in race and age and job background, put them on an island and see how they get along.” (Hillard 1999, p. 3)

Establishing a utopian society in the wilderness is a concept that is part of the very foundations of America, and some of the castaways approached life on their island in an idealistic fashion. This idyllic fantasy was soon shipwrecked by the need for drama, conflict and ratings. Those contestants who naively believed themselves to be surrounded by characters as winsome and charming as those appearing in a 1960s sitcom were gradually eliminated by party politics. The game show element required participants to achieve a complex blend of competition and co-operation to succeed, and it seems that *Survivor I* explicitly set out to mirror contemporary American capitalist/corporate society:

“*Survivor*” executive producer Mark Burnett told me the island culture on Pulau Tiga was no different from the bedrooms and boardrooms of American society. That is, we have to learn to get along with people we like and people we dislike and, to survive, we have to keep trying. (Hunter 2000)

The enormous prize money and the fact that it was “only a game” were repeatedly used by the ‘final four’ castaways as justifications for their Machiavellian intrigues in *Survivor I*. These were a major part of the storyline, and considerable time on the show was devoted to them. The producer created the rules governing people’s behaviour on the island, and by requiring the castaways themselves to determine who would be the ultimate winner, it could be argued that they were designed from the outset to maximise the potential for conflicts to arise.

Ostracism is an old, sometimes brutal instrument of social punishment. When carried out in front of a viewing audience
numbered in the millions, there is a great potential for people to become seriously hurt psychologically. Two years ago in a Swedish version of *Survivor*, the first member to be ejected from a group left on an island committed suicide. His widow told a Swedish newspaper that:

"...her husband had become deeply depressed ... he felt degraded and didn't see any meaning in life, worrying about having to wait to see his failure on the air. 'He was a glad and stable person when he went away,' Savija says, 'and when he came back he told me, 'They are going to cut away the good things I did and make me look like a fool, only to show I was the worst, and that I was the one that had to go.'" (Hillard 1999, p. 2)

Some commentators have noted disturbing parallels between *Survivor* and experiments by sociologists after World War II involving a simulated prison camp, which "...showed that, given the opportunity, ordinary respondents could become brutalised." (Light, 2000, p. 64) The most famous of these was the Milgram experiment, where so-called "teachers" (in fact the unknowing subjects of the experiment) were directed to administer electric shocks of increasing intensity to a "learner".

"When Milgram conducted the study, he found that with a little bit of coaxing, the majority (60%) of subjects would administer shocks right through to 450 volts ... interviews with his subjects tended to confirm the view that ordinary, everyday people can cause pain and suffering to another person under the right set of circumstances." (Baxter 2001, p. 4)

The Milgram experiment was exploring the issue of obedience to authority. It reached the disturbing conclusion that most people would continue to obey directives (albeit, in some cases, with extreme personal distress) even when those directives were clearly causing harm to another person.

The authority of *Survivor*'s producer over production crews operating in isolated locations must be considerable. If some on the production team have reservations about the consequences of their
actions for the well being of the castaways, it is unlikely that they feel able to challenge his authority. The CBS production appeared to be well resourced, and presumably operated within the ethical constraints imposed by a major television network. Yet, despite this, there were two incidents in the second series that caused considerable controversy. One involved the illegal removal of coral from a national park and the second was a heavily edited sequence that showed Michael Skupin hunting & killing a pig:

...one contestant clumsily stabs to death a small wild pig for – let’s be clear about this – entertainment ... Remember, this really happened. The pig really is dead. Its killer really is a sick bastard. The CBS network really should be ashamed of itself. (Romei 2001, p. 17)

In some shows there is even an element of danger, and contestants place themselves in hazardous situations. As with many sporting events, the possibility of injury may be part of the thrill for the audience. In Survivor II, viewers witnessed Michael Skupin being evacuated by helicopter after being badly burnt, and the effect that this had upon the other contestants. The presence of crocodiles on the same location with the contestants was clearly established by the cameras, and even highlighted in attendant publicity. In the same interview the host, Jeff Probst, also played up the possibility of injury in the next series:

“I think there is a chance that somebody could die or be seriously hurt. Nobody wants it to happen, but you can’t go and fence off people from the outside world in a program like this ... you can take precautions, but you can’t take the risk out of it.” (Newton 2001, p. 35)

Experience tells us that numerous imitators will arise in the future, and it is likely that these will be tempted to go further than the existing formats. It may be that these will provoke calls for some form of regulation by government authorities, or at the very least the adoption of a code of ethics similar to those which constrain academic researchers into human behaviour.
Reality soaps and “liveness”

When television began, anything seen by the audience was either live or telecined from film. With the introduction of videotape in the 1970s the amount of live content declined rapidly, and the current trend amongst television theorists is to reduce its importance. A contrary view is argued by Bourdon, who maintains that the technical possibility of live broadcasting remains important to audiences because:

> “From the top, major institutions have all used news, then radio and television liveness, to create a connection between the masses and events ... at the base, the need to connect oneself, with others, to the world’s events, is central to the development of the modern nation ...” (Bourdon 2000, p. 553)

Even though live broadcasts are now comparatively rare, television remains deeply influenced by its possibility. This is because “liveness” is more than just a technical phenomenon. Audiences may deliberately choose to consume a television product in such a way that it feels “live”, as a way of connecting with others in their society.

Bourdon suggests the following typology for degrees of “liveness” in television sequences:

- **Fully live** - major media events such as election night specials or Diana’s funeral, which break into the normal run of programming; other examples are news shows or channels such as CNN where the viewer “knows” the broadcast to be happening “now”, particularly where these might involve live crosses to an OB unit on location.

- **Continuity** - has the appearance of being live but may not be – sporting matches, game shows, variety programs; the viewer cannot really tell from cues within the program if the show is coming to them live or off tape. In some circumstances, viewers enhance their viewing experience by preserving the “liveness” (for example, by avoiding news bulletins on radio about a sporting event which they intend viewing as a delayed telecast – it’s “live” to me).
Edited — non-fictional television such as news stories within the evening bulletin, or documentaries; these may use “stand-ups” to indicate ‘presentness’; or cover jump cuts in the interviews by cutaways to the journalist (“noddies”) but despite this the viewer almost certainly does not believe them to be live.

Fiction — programs that have been recorded live before an audience such as sitcoms, followed by most forms of fiction such as series or soap operas, which in today’s television are no longer broadcast live. Films have minimal ‘liveness’.

In this typology, reality soap programs would appear to fall somewhere between edited and fiction. The possibility of live broadcasts barely exists in most of these shows because the participants tend to spend a great deal of their time waiting around for something exciting to happen. In order to make this interesting for a television audience the editors must take on a role similar to that played by the writers of a fictional series. They construct a narrative from the raw material that both compresses time and highlights the inter-relationships between members of the “cast”. The application of new editing technologies to this process should not go without comment. The sheer volume of material generated by these shows could not be cut (and presumably re-cut in the light of later events) without the speed and flexibility offered by non-linear computer based editing systems, which became a common feature of the television industry only in the mid to late nineties.

However, the game show element injects a kind of uncertainty which is reminiscent of live television. The audience is aware that non-actors are competing in situations that are un-scripted, where the outcomes have not been pre-determined by the producers. This element of uncertainty provides a sensation of “immediacy” by allowing audiences to have the expectation that “anything might happen” — one of the characteristics of live television. The elimination of contestants is a common feature, and the producers go to inordinate lengths to ensure that audiences do not know in advance of viewing who wins or loses, recognising that uncertainty of outcome (as with most game shows or sports events) is a key element of viewing pleasure. Accordingly, I would argue that reality soaps actually contain many elements of the “continuity” strand of television broadcasting, despite the often stylised editing techniques. At times they even ascend the scale and become fully live, as in Big
Brother when the audience votes on who should be evicted, or the final episode of *Survivor II* where the winner was revealed before a studio audience in Los Angeles. In this latter event the cast transmogrified into Barbie dolls sitting around a *Flinstones*-like recreation of the Outback Tribal Council area. Although live, it was a truly bizarre discontinuity which succeeded in being more unreal than the earlier part of the show that had been produced some weeks previously.

The ratings success of these shows (the final episode of *Survivor I* attracted in excess of 50 million viewers in America) would also indicate that viewers are choosing to consume them as if live, and once the outcome of the contest is known it seems that this kind of programming is apparently not attractive to audiences the second time around:

"Reality shows have a short shelf life," one programmer notes, "they just don't seem to sell well in syndication." Another comments that watching Reali-TV reruns is like "reading yesterday's news". (Raphael 1997, p. 109)

**Conclusion**

Television is combining modern, lightweight digital cameras with a new-found ability to process high volumes of wild footage using non-linear techniques to produce a new form of entertainment, which has variously been described as "reality soap" and "psycho-games".

Instead of actors following scripts in a studio, audiences can see people very like themselves plotting and scheming for advantage in any setting imaginable. The story arc is driven by a game show element which forces people into situations where conflict is inevitable.

The audience consumes these shows in much the same way as the live telecast of a sporting event because uncertainty is a key part of the viewing experience. However the focus on inter-relationships between the contestants brings in elements more usually found in fiction, and suggests that this deepening of the "live" experience resulting from a crossover between genres might account for the extraordinary successes these shows appear to have achieved. In this respect, "reality soap" seems to hark back to the very early years of
“live” television when “anything might happen” – and sometimes did.

**Bibliography**


In “His” Own Image:
Breaking the Skin I'm In

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ABSTRACT: My intention in this essay is to describe some of the roles that the human image has been given in its photographic representation. Particularly, I wish to focus on the forecasts of bodily “change” being projected at the threshold of the digital “revolution”. The process of cultural communication is strategically different in the digital age: we use different tools. However, these invented tools of technology rarely aim to support changes in cultural meaning and structures of power.

To err is human, but to really foul things up requires a computer.

Computers currently require humans to — err — push the foul buttons. (My reflection on the 1978 statement, influenced by the human computer relationship in the year 2001.)

[The postbiological world] is a world in which the human race is swept away by the tide of cultural change, usurped by its own artificial progeny.... When that happens, our DNA will find itself out of a job, having lost the evolutionary race to a new kind of competition.

Prediction is very hard, especially when it's about the future.
(Yogi Berra cited in Kaku. 1998, p.3)

It takes a long time to understand nothing.
The past two years [93 – 95] have prepared America for a changed world — or more precisely, a new world: one that exists on the shimmering surface of our computer screens … the media has refurbished that old American icon of both progress and freedom: the highway. Soon, every American will be back on the open road. New roadside businesses will emerge as the map of the Internet continues to encompass the globe. But in its current figuration, the ‘net does more than network the globe; it creates a metaphorical world in which we conduct our lives. And the more ecstatic the promises of new, possible worlds, the more problematic the concept of “the world” becomes.
(Nunes, 1995.)

The future is fairly difficult to predict, even at the best of times. In a period of rapid technological change and development, its divination is almost impossible. Yet, we feel most comfortable — as a culture of understanding — prophesising about the “natural necessities” ¹ of the future, when we are within a period of energetic technological change. We feel our event horizon approaching so rapidly, passing so instantaneously, as if it were constantly under fleeting change. But can we viably estimate the “natural” evolution of humanity from within such a climate of energised facilitation and structured interference?

¹ The condition of being necessary according to the laws of nature, logical or mathematical according to those of human intelligence, moral according to those of law.
(Macdonald, 1972, p.880)
Currently, invention and progress must closely affiliate with energetic financial support. In a time before our own (2001), labour was the ultimate manipulator of energy for development, but now all of our interactions (work related, friendly, financial, etc) are increasingly being mechanically facilitated and mediated. We no longer require the co-ordination of brain and muscle: mental responses dominate us as we rapidly react to the control panel. Cybernetics 2 is surely going to alter our physical being just as the turn from hunter to cultivator did... or is it?

Delving the soil, man [sic.] grew bulkier; chained to the computer console he [sic.] will presumably evolve into a spindle-shanked brain-box.
(Gill. 1989, p.407)

The digital "revolution" echoes with 'possible evolutions of man", an endless scientific fiction of becoming. For their own survival, digital-men are able to alter destiny as frequently as software is upgraded. Bill Gates is an example of a white-American-male that — even in his physical flaccidity — has been able to reach a position of influence over our present / the future. The most predicted outcome ("naturalised future" 3) of the digital "revolution" is that, 'Man may change, but his energy and curiosity are inexhaustible'
(Gill. 1989, p.408).

In the future, there are no roads.

2 The comparative study of automatic communication and control in functions of living bodies and in mechanical and electric systems (such as computers). [Gr. kybernetes, a steersman.]
(Macdonald. 1972, p.321)

3 Conventional outcomes are "naturalised" or 'made to seem vraisemblable (credible)—that is, made to give the illusion of referring to reality—by being brought into accord with modes of discourse and cultural stereotypes that are so familiar and habitual as to seem natural.
(Abrams. 1999, p. 316)
But if you can afford a steamroller, you can have a choice of direction. This ‘techno-deterministic’ philosophy of “survival of the digitally fittest” is embodied in an example given by Ann Willis in her essay (2000), *Nerdy No More: A Case Study of Early Wired (1993–96)*. *Wired* magazine is technologically deterministic in its discourse: it has even been called a ‘Mighty Morphin PowerBook’ (Dery, 1996). In the cyber-age, commercially energised divinations of the future transform the “tragedy” of our limited sense of control into a powerful fantasy of future domination.

This philosophy is summed up in the advertisement for *Wired* magazine which stated “this is the digital revolution, you are either part of the steamroller or part of the road” (a *Wired* advertisement which appeared in *Details* magazine cited in Hudson 1997: 220).

(Willis, 2000, p3)

Are we going to control life? I think so. We all know how imperfect we are. Why not make ourselves a little better suited for survival? That’s what we’ll do. We’ll make ourselves a little better.


My crystal ball tells me that an increased understanding of the immune system and an increased ability to manipulate it genetically will have a major impact on the next ten to twenty years.

(Steven Rosenberg, chief of surgery, NIH cited in Kaku. 1998, p.181)

Like the *Pioneer* 4 spaceship, humanity actually travels at an ever accelerating speed towards a destination unknown. Any outcome we predict as the future of the human journey (involving the matter most likely to exist in that space-time5), will be influenced by the value

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4 The Pioneer 10 spacecraft was the first *physical messenger* humankind sent into interstellar space.

5 Space-time is a term I use to refer to the context or the climate within a period of “significant” space. It suggests that we perceive space to change in time. Calculations of
with which we choose to hold the past achievements of humanity. My own ideas about the future are influenced by the emphasis I have chosen to put on the cultural processes of communication; processes that have structured representations of others and ourselves.

In the fragments of history moored on the ravaging shores of space and time, we look, longingly, for records of our own presence in the constructed past; the structured present; and the predicted future. This process of constructing and communicating culturally shared meanings within a circuit of culture is illustrated in Figure 1.1 (next page).

FIGURE 1.1 The Circuit of Culture

representation

regulation identity

consumption production

(Source: Hall. 1997, p.1)

This circuit of influence is deeply etched into the relations of institutionalised power, structured by our mediated experience of the real; personal awareness is predestined by the "reality" of cultural speed and efficiency bind time (the temporal) with distance (space, the spatial):

eg. Speed = Distance
     Time.
perception. "Reality" is a construct based on the *mythical* stories \(^6\) by which a culture explains or understands some aspect of reality or nature (Fiske, 1990, p. 88). The meanings produced in the circulation of culture are influenced and defined by powerful institutions. The results having the energy to profoundly shape our experience of the real, or our perception of "reality". In this circle of culture, the powerful are given the greatest ability to 'define what is 'normal', who belongs -- and who is excluded' (Hall, 1997, p. 10).

In an essay by Mark Dery, Wired magazine's communication of 'the sped-up, off-centre whirl of late 20th century culture, the cowabunga fun of surfing the Third Wave', is described as myopic in its circulation of culture: 'blind to environmental concerns, race relations, gender politics, and labour issues' (Dery, 1996). Dery paraphrases John Plunkett (the creative director of Wired magazine) when he says:

> Like the liquid metal T-1000, whose "mimetic pollyalloy" enables it to morph into "anything it samples by physical contact." *Wired* uses digital technology to "vacuum up all references within the known history of mankind".
> (Dery, 1996.)

Those who respond to the espoused potential of the digital age seek firstly to understand the computer revolution, and secondly to take advantage of it, directing it toward realising their exclusive vision.

> My suggestion is this; that for worse and for better, we are today virtually all struggling to survive and communicate if differently and in different modes — within the hegemonic exigencies of the cybernetic culture ... A looping fragment of memory catches my eye / "I," as information enflames [sic.] the sensory manifold between

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\(^6\) Myths work to naturalise history — that is, they are *representations* that aim to *regulate* the mass *consumption* of *identity* — they are *dominant* stories, not totalising *omniscient* narratives. Nevertheless, myth obscures its origins in culture, presenting its meaning as if it were *natural* (eg. particular his-stories are turned — by myth — into *nature*).
us. Turning me on. Off. Turning history inside outside. The flapping of a window curtain. The digital smoothness of the screen separating my body from a data-driven images [sic.] of yours. The flickering of electronically mediated fantasies between us. And fears. Wired bodies. Hard bodies. Microsoft hearts. Energetically aroused, then fashionably abandoned. I love the advert tattooing your sex. You love my CK Infinity. Or so I’m led to imagine. Day dream. On credit. This is cybernetic capital. This is ultramodern power. A digitised white grid of anxious informational pleasures and pains. “As the CEO’s and the specialist consultants of the virtual class triumphantly proclaim: “Adapt or you’re toast.” The smell of burning flesh.
(Pfohl, 1997.)

Adapt or you’re toast! Assimilate or be crushed!
This vision is about as appealing as Bill Gates in a pink gingham number that leaves too much of his nerdy-skin exposed. In a book or a magazine, however, Gates is actually the “perfect” author / ‘cover boy’ (Willis, 2000, p.2) to promote predictions of the “revolution”: to proposed and structure the (digital) future. Gates is the floating signifier for the most highly energised / consumed / economically viable digital “future”. His presence is a vehicle of generalised media through which the digital future is commercially promoted.

Gates’ digitally ecstatic future discourse has been echoed by other computer corporation executives. For example:

The Internet is like a twenty-foot tidal wave coming thousands of miles across the Pacific, an we are in kayaks. It’s been coming across the Pacific for thousands of miles and gaining momentum, and it’s going to lift you up and drop you down.... It affects everybody the computer industry, telecommunications, the media, chip makers, and the software world. Some are more aware of this than others.
Well recited Andrew! Did you ever stop to think that maybe some people—including myself— are more aware than others (namely people like you), that:

Computers can solve any problem in the world, except the unemployment they create.

Technological determinism obscures the cultural continuities involved in energised invention. In its current form, the digital age promises to dramatically change the method in which we do the “stuff” we already do—greatly increasing our “efficiency”. Unfortunately, the actual “stuff” that we will be doing in the future, is “naturally” predicted to remain the same.

A preoccupation and fascination with technological difference obscures important elements of continuity in the cultural meaning and uses of technologies.
(Wells, 2000, p.322)

In Postmodern Virtualities (the second chapter to The Second Media Age (1995), available online at: http://www.humanities.uci.edu/msposter/writings/internet.html), Mark Poster refers to Lyotard’s (past) description of the blurring obscurities of narrative structure in the media’s “second age” (the postmodern age is within the modern one). The futuristic discourse of the digital “revolution” is a confusing mixture of ancient story and objective denotation.

[The narrative structure of tribal, premodern society as stories that (1) legitimate institutions, (2) contain many different forms of language, (3) are transmitted by senders who are part of the narrative and have heard it before and listeners who are possible senders, (4) constructs a non-linear temporality that foreshortens the past and the present, rendering each repetition of the story strangely concurrent and most importantly (5) authorises everyone as a narrator. Modern society, Lyotard argues derives its legitimacy from narratives about science. Within science language (1) does not legitimate institutions, (2) contains the single language form of denotation, (3) does not confirm
addressee as possible sender, (4) gains no validity by being reported and (5) constructs “diachronic” temporeality.

(Poster, 1995.)

We are encultured with \textit{fables} of \textit{“fact”}—this is the age of \textit{science} that is also \textit{fiction}. We are structured by the media and through our consumption of mediation, in general.

In order to see the set of cultural continuities that run through technological change, we have to pay close attention to the institutions and social sites in which new image technologies are being applied, and to the established cultural configurations and practices which are being extended and transformed through such use.

\textbf{know thyself: knowing your body inside and out}

\textbf{existence before essence}

In 1989, the US National Library of Medicine (NLM) began instituting and energising a project aimed at building an image library of volumetric data representing complete female and male bodies — it was dubbed the \textit{Visible Human Project} (VHP). Today in the year 2001, this digitised archive of anatomical data is partially available for free-use over the Internet (for full access, one must pay).

In 1991, a similar project was established by the University of Colorado; and this was called \textit{Body Voyage} (BV). Their subject was Joseph Paul Jerigan, a convicted murderer on death row who had donated his body to science. The BV project also aimed to transfer the grotesquely anachronistic discipline of anatomy into the digital realm of “techno-science”, but wishing to make it available on CD-ROM.

The defunct (corporeal) flesh of the cadaver must be dramatically altered before it is possible digitally encode / produce (scan in) a
virtually anatomised body. The digital VHP body was designed to aid the study of modern anatomy; a science that breaks down the body into its physiological functions (circulatory, respiratory, reproductive, muscular), organs and tissues. Yet, the production of the VHP body lapsed with the traditional partitioning logic of the same science it aimed to support.

The conflicting structure of the Visible Human reflects Poster's description of Lyotard's (past) idea that (in the future), 'totalitarian control' will be falsely advertised (depicted in such a way as to aid its cultural consumption) as 'a decentralised, multiple, 'little narrativity' ' (Poster, 1995). Our denotative capabilities (our ability to objectively observe without passing value judgement) are greatly clouded by 'little tales' of 'big adventures' (institutionalised myths of difference that require fictional values to be attached to objects - thematic, symbolic, cultural).

The VHP body is accessed through a database consisting of a series of digital image files. These are the CT scans (Computer Tomography similar to X-rays), the MRI scans (Magnetic Resonance Imaging - like ultrasound), and cryosectional scans (the cadaver is frozen and then cross-sectionally sliced into millimetre thick slices and scanned).

On the VHP website, the (3-D) model of the body is broken down into a "logical" format, but this does not divide the body into single organs and body parts (as in modern anatomy). The Visible Human is partitioned into discrete binary files, consisting of the cross-sectional sliced (and then scanned / digitised / coded) images of the cadaver.

This "body" has been prepared, altered and displayed, to form a version of the digital and "hyper-texted-body". A "body" that, in its (fragmented) design requests and wants to be networked.

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These adventures most commonly naturalise the mythic "fantasy-reality" of the white--North-American--man with swollen wallet syndrome. "He" is our demographically elected "super--[a]--hero" Â™ (super-floppy-hero -- batteries not included) in the second media age. "He" empowers "fact", "fact" does not control "him".
Not really the wired body of sci-fi with its mutant designer look, or body flesh with its ghostly reminders of nineteenth century philosophy, but a hyper-texted-body as both: a wired nervous system embedded in a living (dedicated) flesh... It does not want to be interfaced to the Net through modems and external software black boxes, but actually wants to be an Internet. (Kroker, & Weinstein. 1994, p.16)

Do these new processes in anatomy symbolise a new "type" of embodiment? Did NLM create the VHP to alter rather than aid anatomical science? Does the VHP symbolise a revolution in representation? Perhaps we should decide whether the VHP differs from the ways deterministic science has traditionally treated the body.

There is in fact no clear separation between photo-mechanical and electronic imaging in the context of the surveillance and classification of the body. (Wells. 2000, p.322)

Each time a new medium is introduced, its early adopters tend to work with it as if it were a familiar, traditional medium. A new medium is always something structured by old conditions and ideas. Therefore, the digital culture hasn’t changed the things we are trying to do, as much as it has changed the way in which we do the (same) things we did before.

Both digital and photo-mechanical processes participate in the gendered and raced power relations of an increasingly technologised, masculine medical science which seeks to dominate the female body with its connotations of the "natural" and "maternal". To typify the sorts of invasive body-technologies currently being "installed" in living human subjects, I wish to briefly discuss reproductive technologies. Historically these have been (and continue to be) designed (by men) for female users. These (and other) body-technologies are becoming more and more invasive, in that they are being designed to be increasingly difficult for the "host" to remove.
A particular example is *Norplant* — a new reproductive technology that is not easily removed by the woman who has it sub-dermally implanted. Even though *Norplant* has some very serious side-effects (including cervical cancer), it is being "prescribed" as a body-technology by judges and political representatives in the US (usually white men who have an apparent disliking for the welfare mother); used as a condition for parole or welfare.\(^8\) Technology is used to control bodies.

Returning to the *VHP*; this digital body abandoned the traditional methods of anatomy meditation in its *production*, but not in its *epistemological underpinning*. The new (digital) partitioning logic allowed anatomy to merge with the geometry of the Internet; coding this body to fit the digital, visual medium. NLM did not *alter* bodily discourse with the *VHP*, it *adapted* anatomy books for Web access, recoding them for pedagogical purpose.

The *VHP* was reconstituted along the lines of scanning and surface data most appropriate for digital image processing and file standardisation.

(Thacker, 1998.)

The NLM says (on their *VHP* website) that they ‘foresaw a coming era where NLM’s biographic and factual database services would be complemented by libraries of digital images, distributed over high speed computer networks and by high capacity physical media.’\(^9\) In other words, the primary concern or issue behind the *VHP* was as much about information configuration as it is about anatomy: it was as much about representing an "objective reality" as it was about institutionalised mediation.


gestural hieroglyphics occupying space

alienation

Floating Point Unit (FPU) performed as a digital arts collective from 1991 – 1997. The group transmitted their installations over the web, constellating the digital body in a way radically different from the VHP.

The image in a digital file is not like the image we see on screen: the binary code refers to an image in computer code: a string of zeros and ones. Unlike the VHP, FPU overtly suggest that the construction of the networked cyber-body is preceded by the digital encoding of the flesh, which is then networked into the electric public spaces of real-time webcasting. One particular project, Body Without Organs (BWO) addressed FPU’s critical and ambiguous dissatisfaction with the “natural” body (scientific-psychological), while asserting and suggesting dystopias, ambiguities and possibilities for the hyper-texted-body and the electric flesh. According to Antonin Artaud (FPU’s most recognised artist), the human body has been ‘badly constructed’ through scientific discourse and it required alteration.

10 The “logic” behind naturalisation is simple. Abrams (1999) says that ‘representation[s] of the world [are] no more than an effect generated by the process of reading. [and] the world is itself held to be in its turn a text, that is, simply a structure of signs whose significance is constituted by the cultural conventions, codes, and ideology that happen to be shared by members of a cultural community’ (pp. 316–317).

Stuart Hall (1998) also outlines it well: ‘[i]f differences ... are “cultural”, then they are open to modification and change. But if they are “natural” ... then, they are beyond history, permanent and fixed. ‘Naturalisation’ is therefore a representational strategy to fix “difference”, and thus secure it forever. It is an attempt to halt the inevitable “slide” of meaning to secure discursive or ideological “closure” ‘ (p. 245).
The VHP has made pedagogical advances in the presentation and organisation of the human anatomy, and similarly FPU achieved this: within the context of another "type" of embodiment discourse. FPU use anatomies marked by psychosis, electroshock, spectacle, and the black magic of words.

It is Artaud’s conviction that ‘electricity is a body,’ and that the body is some kind of ‘electric charge,’ which is part of the ‘thickness’ of the surface of the body itself. Artaud and FPU had become so dissatisfied with the notion of anatomy and physiology as the naturalised, hegemonic body discourses: that the organs, the genitals, the digestive and excretory functions, and the inert meat; were all to have their potential energies re-routed toward a physiology designed to reorder the body on an ‘affective plane’. BWO was an anatomy of physical and physiological dynamics, emitted from the abstruse sensory field of the nervous system: bone marrow, flesh, synapses, electric biochemical signals and ‘mental pathways’ in the flesh.

Does the BWO represent a “revolutionary” digital embodiment? Or is their use of e-technology merely a new method of communicating the same cultural representations of body, like the VHP? Is the digital “revolution” a symbol for real change, or only for a change similar to those influenced by the introduction of photography and television?

Following the technotopic rhetoric which still very much informs... Web based advertising, the push towards real-time media on the Web has followed the trend of incorporating and embedding the philosophical relics of presence into data packets of mediation. FPU’s web-site never lets the user forget the layers of media tactility which inform contemporary digital culture; their use of the computer as an aesthetic... always diffracts the user as situated in relation to the intimacy of digital technology.

(Thacker, 1998.)

Shall we understand BWO as an attempt to really recode the configurations of the body-technology relationship over the Web? Are FPU creating merely techno-topianist instances of “real bodies”, which are collectively mediated by technology? Do FPU extend and use the BWO in an effort to find out how embodiment is occasioned
through technology; or how the digital is embodied? I believe that, in displaying their own bodies, FPU is criticising the naturalised processes of representation. New body-technology interfaces are (in this sense) extending themselves to form truly revolutionary digital embodiments; however, this is not (currently) the usual direction for the simulated body.

Information technology is mostly positioned:

as the panacea with little thought to other cultural, economic or social factors which may inhibit the consumption practices and characteristics required to be ‘info rich’.
(Willis. 2000, p.2)

But what gives the “information rich” power to mediate the cultural communication of “reality”?

**illusion is no longer possible because the real is no longer possible**

**anxious that we shall be lost in the crowd**

In *Simulacra and Simulation*, French social theorist Jean Baudrillard described the concept of simulation, arguing that our postmodern culture is a world of signs that have made a fundamental break from referring to the real world.

Simulation is the creation of a lived “reality” through conceptual or mythological models which have not connection or origin in the actual-[real]-ity. ‘The model becomes the determinant of our perception of reality – the real’ (Hawk, 1997) Simulation vacuums ‘up all references within the known history of mankind [sic.]’, and it is interesting that John Plunkett (*Wired* magazine creative director) gives this description of *Wired*. The media creates so many images (simulations) and signs (simulacra) of the real, that the boundary
between the image and reality implodes, creating a world of "hyperreality."

The culture industry blurs the lines between facts and information, between information and entertainment, between entertainment and politics... Because simulations and simulacra ultimately have no referents, the social begins to implode. This process of social entropy leads to the collapse of all boundaries between meanings and culture and society become a flux of undifferentiated images and signs.
(Hawk, 1997.)

Simulation is about the rapid and unstoppable and ever changing display of images across the electronic reality of the late twentieth-century cyber-scape in which the mass and the media become a single process. A simulation that preoccupies and fascinates participants with technological difference (as "revolution"), obscures and blurs the continuities in the uses of technology, and subsequently these expressions hide the continued perpetuation of an exclusive cultural meaning.

Why do we continue to construct our desires as things that exist outside our own bodies? Why do we perpetuate a culture of hate, when all what we really want is love? Why do we let people be treated like space-porkers-from-hell when The Beatles have already told us: 'All you need is love'.

americans have no identity, but they do have wonderful teeth

nothingness, nihilism

Recently a frantic woman chased a man wearing a sandwich-board – a running billboard – down Broadway. Did she want the man or the image? Did he / it take something from her? We will never know, since she ran out
of steam – she wasn’t fit to catch up. I thought, to optimise this pursuit, she should head for ‘Better Bodies’, which is one of the places where bodies are being made fit to catch up to images. (Crandall, 1997.)

Being made fit to catch up to images — now there’s an interesting thought! We exist in a controlled environment in which “desire” is pre-programmed, and in which “we” — as loyal subject-objects — are structured by the media, and by mediation in general.

We are more than waist deep in the big mud of commercial culture. It is the environment in which we swim, and like those apocryphal fish, we would be the last ones to discover the water. In this culture of hype, celebrity is king. (Weinstein, 1995.)

We feel a desire to morph our bodies into an ideal (simulacra-tised) image: a composite image, collated from vast amounts of representations (simulations) and self-reflections. One never really realises one’s real body, just as we never seem to bring into being the sense that, wherever there is an image, there is an incomplete body running after it. Take a treadmill as an example: with the television placed ahead for strategic motivation, one runs toward an image that will never be acquired. We seem to think:

By design, the body should go on forever. (Elliot Cooke, Stanford University biochemist cited in Kaku. 1998, p.200)

However, as implied in Sioux (American Indian) poem, the earth only endures. To this end, further wisdom may be gained from the four disciples John, Paul, George and Ringo:

All things must pass. (George Harrison cited in Kaku. 1998, p.99)

We are not the centre of the universe. We are not even the centre of the earth. We are the centre of our own perception. That is all. But what that means is that “reality” and “fact” are things processed within the world political economy in accordance to their
relationship to liberal "progress". Representation is one of these "facts" of "reality".

This political formation mirrors the traditional liberal claims to autonomy while developing increasingly subtle, modes of subject-formation. These trends are not happenstance, but intimately related to the transition of Cold War industrial political economies into power relations of improvement and flexibility. Moreover, these mechanisms of power are gendered, ... in that the structures of the power relations within liberalism are masculinised. These structures are indebted to the masculinist concepts of sovereignty and "autonomy" which permeate the rhetoric of "choice" and "freedom" in the world political economic landscape.

(Jenks, 1997.)

Will future representations of the body be different from the despotic, techno-topian representations that are overly expressed? Is the digital; "revolution" really a revolution? Well, currently there seems to be many conflicting answers to these questions, but one word of advice: forget about the "future" of representation, the wheels are already in motion.

If Baudrillard’s critique of modernity applies to the current acceleration in information and communication technology, as well as the media euphoria surrounding these occurrences, then the Internet likewise provides a context for understanding Baudrillard’s image of fatal technology. This image in Baudrillard, and conversely, the shadow of Baudrillard cast upon information technology, foregrounds

Act or condition of revolving: movement in an orbit, as distinguished from rotation: less commonly rotation:

A complete turn by an object or figure, through four right angles, about an axis: a cycle or a phenomena or of time: recurrence in cycles: turning over in the mind (arch.):

Mutation (Shak.): great upheaval: a complete change eg. in outlook, social habits or circumstances: a radical change in government.

(Macdonald. 1972, p.1157)
the contemporary challenges to “the real” in postmodern culture. This reading also suggests, however, how Baudrillard can be used to dissuade Internet beyond its modern closures. Replacing the one world with possible worlds, Internet ultimately offers both the seductions and subductions of a postmodern “world.”
(Nunes, 1995.)

implication is all

awful freedom

In 1996, Warwick University had a Virtual Future’s Conference for artists and aesthetic engineers. Dr Rachel Armstrong gave a performance lecture about the link between medicine and aesthetics. At this conference she theorised the works of artistic-cosmetic engineers such as Stellarc. For example, Parasite Visions is Stellarc’s explanation of how the Internet can generate “new collective physical couplings, a telematic scaling of subjectivity” (i-D magazine, 1998, p.115), as it has the ability to focus less on identity and location, and more on connectivity and interface.

These artists tend to question and criticise current expressions of the body, generating the suggestion that the “natural” body does not exist. A conviction similar to that expressed by FPU. It seems that “Nature” is cooked by culture in its definition of what is “natural”, and what is not. Armstrong argues carnal artists are:

creating a series of self portraits where their own flesh, sinews and organs become the canvas. Their images play an anticipatory role, generating new perceptions which act to rearrange the sensorium, to adjust the viewer to ongoing transformations of basic human design.
(i-D magazine, 1998, p.115)

Orlan, a French exemplar of carnal art, recently had an installation in Los Angeles called Ghost in a Shell, which featured a photographic
piece called *Omnipresence*. This consisted of forty-one ciba-chrome on aluminium prints (1.16m by 1.66m) of Orlan’s face, subtly merged (digitally manipulated) with different female icons from the canon of Western art history.

‘Carnal art’ rails against the banality of modern beauty standards and the paradox present to those who enshrine them. Under topical anaesthesia, Orlan remained conscious, smiling and speaking throughout the operation, which took place in New York and was transmitted live, via satellite, to museums around North America and Europe... Her aesthetic renovations are not necessarily designed to be beautiful: They challenge our reliance on appearances and the rigid conclusions about identity we make based on them.

(FLAUNT magazine. 2000, p. 75)

Just as Baudrillard theorises that the boundaries between meaning are made indiscernible by hyperreality, so too is Orlan’s face. She no longer has a single face that is “real” because all of her other faces are potentially “real”. “Reality” is multiple just like the voice of the digital “revolution”. By challenging assumptions based on representation and identity, Orlan is creating a “revolutionary” embodiment with digital technology: she is challenging the way we perceive “reality”.

Orlan’s body is a modified “ready-made”, a terrain for public debate, reflecting society's norms of desire. At the Los Angeles opening of her exhibition *Ghost in a Shell*, she would have been the only woman (or man) in attendance to wear her surgery as an emblem rather than a disguise.
fascination is the extreme intensity of the neutral

the impotence of reason and the flaccid body

Simulation infinitely refuses to assert its status directly: it is a virtually “real” and contextually energised expression of an interpreted version of actual reality / actuality. As Bob Dylan reminds us in his song *Subterranean Homesick Blues*, “reality” is full of untruths. Even when you think you know what’s going on, sometimes, “reality” just doesn’t “add up”.

Twenty years of schoolin’
And they put you on the day shift.
Look out kid,
They keep it all hid.
(Dylan, 1965.)

And they do! “Reality” is stimulated by energy and power: energy \(\Leftrightarrow\) “reality” \([\mathcal{E}]\). However, there is something being hidden. Only authorised energy \(\Rightarrow\) (energises) “reality”. Other realities (transgressors of the institutional order) are permitted only liminal placing \([\mathcal{S}]\).

By the ecstatic digital culture of “change” and “freedom” we are very much fascinated and preoccupied. We are also selectively myopic: a commodious fetishism in our blindness. The fabricated part of “reality” (where artistic licence replaces earthly “truth”) becomes as translucent as the computer’s technological “complexities”, when put behind the veiled-colourful-feigned-fruity-transparency of the iMac computer artifice. A machine that is flavourably (strawberry, tangerine, etc) “cute”: “functionally aesthetic”.

The “truth” of “reality” is in its controlled multiplicity. “Reality” limits potential avenues for resistance, instituting “devolution” above and beyond “revolution”. The mediation forces our perception of “reality” to mutate, simulate, transform, change, multiply, converge and congeal onto itself. “Reality” becomes virtual, multiple, perceptual, and something creatable.
Baudrillard talks about the multiplicity of "reality" in terms of potential and kinetic energy, his argument connecting to the Internet and its ability to perceptually "erase" spatial and temporal boundaries. Space and time are obscured by Internet architecture. This vehicle has been designed to multiply (spread) an energised "reality", to the statistical reduction of "others" (globally).

A virtual potential space replaces real kinetic space, or rather, "real" potential translates metaphorically into a virtual "kinetic" energy. The image of "cybertravel" has currency precisely because it offers a metaphorical world on / beyond a computer screen, a "globe" that no longer stands for the world because it has become "the world." This perspective on the current media images of Internet suggests that the conceptual model of a cybernetic "space" does not augment the world; it abandons the world for one which can be fully realised and fully encompassed — a world of transparency and immediacy.

(Nunes, 1995.)

We are constantly being instructed to visualise our "world" as if it's getting smaller. Personally — between you and me — I have had more than a little trouble equating this with my own experience of a spatial and temporal "reality". Maybe there is a progression here. A movement from orality to literacy, which is in turn giving way to videocy — the chaotic, idiotic culture of simulation. But we should not get too caught up in progressions. It always was and continues to be simulations all the way up and down the line,... simulation controls us. But the simulation is not necessarily one of myth or media. Rather, it is the built in nature of simulation in life — the realisation that nothing seems to be real. It is all a drug trip, a lame attempt to script a narrative that can never be closed — an incessant, and futile, will to order.

(Hawk, 1998.)

When we realise that our world 'may not be what it seems, what [we were] told it [was, we realise] the disruptive potential of chaos' —
we ‘hope for change, for liberation.’ But the only human “choice” involved is, whether or not we are:

able to accept the feeling chaos ultimately brings. Once the euphoria of being in control subsides, once a person comes down from his/her trip into paranoia, s/he is inevitably left with cynicism.  
(Hawk, 1998.)

OK. My “cynicism” is this:

The power to authorise “reality” (accepted and empowered by energy) and “unreality” (rejected and disempowered by lack of energy), and the power to identify the receptive bodies of power that “require” the depletion of the bodily power of others; is the ability to choose, assign, energise and dismiss. Therefore, the perception of “unreality” (chaos) is added to “reality” (order), just as much as a structured “reality” forcibly informs the “others” which have been defined as “chaotically unreal”.

Digital technology could dramatically change a currently myopic circulation of culture. However, inequalities in access have made this a minute possibility. Our consumption regulates our representation and sense of identity. Moreover, we are constantly consuming their powerful productions of ourselves.

Baudrillard suggests that ironically, telematics might require a distance in order to overcome it. In some of his most direct comments on computer networking technology, he writes that the “Telecomputer Man” [sic.] experiences “a very special kind of distance which can only be described as unbridgeable by the body ...The screen is merely virtual and hence unbridgeable” (Transparency 55). Although he [sic.] cannot cross his [sic.] screen, he [sic.] can “circulate” himself [sic.] through the media. The implosion of real distance creates the need for a strategy of deterrence: a simulation of space and distance which the body cannot breech, but which a simulated self (complete with computer prostheses) can travel.  
(Nunes, 1995.)
A “revolution” requires an ideological shift, yet a shift in ideas implies a true change — and so the aggregating circular seduction of paradox goes on, the snake eating its own tail. Currently we are seeing a “revolution” that implies we are to eternally turn through destiny about an axis of control, blind like Mr McGoo to our true power. So what do we do? Beck Hanson sings about how it may be possible to resist hegemonic control and attain true change. He advocates group action when he suggests (in the song *Mixed Business*, 1999) that the:

Freaks flock together,  
Makin’ all the people scream!  
Alright     Alright.  
Turn it up now.  
Alright     Alright.  
Turn it up now.  
Alright     Alright.  
Turn it up now.  
Ooh ooh ooh!  
(Hanson, 1999.)

It is indeed time for some rhizomorphic group action! It is time that we rocked the establishment — together! The future can “invert” the “reality” of the past, only if the future is not claimed exclusively. To change the future we have to look back in time: we have to revisit and revoice the past. The future is enforceable, but not “alterable” — future events cannot be changed because they have not happened. The future is only alterable when we recognise and appreciate “our” silenced past.

Destiny is not a matter of chance—  
it is a matter of choice.  
It is not a thing to be waited for—  
it is a thing to be achieved  

Any attempt to shape the world and modify human personality in order to create a self-chosen pattern of life involves many unknown consequences. Human destiny is bound to remain a gamble, because at some unpredictable time and in some unforeseeable manner nature will strike back.  
Transgressors to the order must revolutionise/transcend the boundaries between themselves and other liminal bodies. This would alter the way we look at the past; change the way we deal with the present; and revolutionise the way we think about the future. We all have to get together to give voice to ourselves. We have to work towards a society in which understanding is at least attempted, before the policy of persecution is adopted.

There is no "JUSTICE" — there is JUST—US!

equality of access

In the digital culture, one will:

find the banal at every turn. One would also hope to find objects of seduction and artifice, objects that turn us away from our intended goals.
(Nunes, 1995.)

But take heart. I think to gain any power in this "reality" we have to begin to use the Internet differently: we need to circulate ourselves. Currently, women can be shown as an objects of desire, but they are not allowed to be objects with desire. Currently, many people in Western Australia do not think reconciliation is important. Many say that the Pride march should not have gone through the streets of Northbridge. People... we gotta fight together, cos we gotta come together. We can't nihilistically destroy the boundaries between us. However, we must begin not by making judgements according to our own perception of "reality" (structured by these boundaries). We must begin by learning to perceive difference without placing value on its "discontinuities":

Internet, rather than presenting a simulation of totality, might provide a space of play. Rather than pursuing ends through this technology, one might instead turn oneself over to the drift and derive of "cyberspace." Baudrillard's fatal vision shimmers on the surface of our computer screens. His vision, however, also challenges us to find a depth to
the screen, to find — or rather, lose — ourselves on a different heading, off familiar paths.” (Nunes, 1995.)

I have included some of my own photo-transformations, which may or may not be “revolutionary”. I am trying to lose myself in circulation myself. I hope to bump into you all sometime while on my own path. I hope that we can begin to work together. I hope that our paths remain different, but that their difference does not require their separation.

The digital “revolution” dominates representations of the possible future. However, true revolution does not usually begin in an audible fashion: it is not “loud”, and this tells us something about the digital “revolution” and the value of its truth. True change has been most successfully accomplished when it is begun in silence and ends with voice. This is a concept that Tracy Chapman alludes to in her song, *Talkin’ Bout a Revolution* (1988):

```
Don’t you know
They’re talkin’ about a revolution
It sounds like a whisper

While they’re standing in the welfare lines
Crying at the doorsteps of those armies of salvation
Wasting time in the unemployment lines
Sitting around waiting for a promotion

Poor people gonna rise up
And get their share
Poor people gonna rise up
And take what’s theirs

Don’t you know
You better run, run, run…
Oh I said you better
Run, run, run…

Finally the tables are starting to turn
Talkin’ bout a revolution
(Chapman. 1988.)
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The digital "revolution" features the info-rich and the info-poor. In this sense, it is not the friend of the poor, but a friend of poverty. It seems the rich world has a poor conscience. The Internet facilitates those who can afford access, but does not have any strategy for dealing with inequality.

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The Today's Thought section in The West Australian. The future masters of technology will have to be lighthearted and intelligent. The machine easily masters the grim and the dumb—
(the "sex girl" and myself)
Illusion is no longer possible because the real is no longer possible.
she has no idea what it is. It just kept telling her to burn. It just kept telling her to destroy her spirit, un-nurtured, un-natured, is not yet strong enough to stop the fire she ignites inside.

she feels a flash of pain before the microcircuits in her head take over.
(implication is all)
JoePM:
Implementing a collaborative environment for learning multimedia project management.

Andrew Dunbar

ABSTRACT: Using the Web in tertiary learning environments can offer great adaptability and flexibility as it enables the planning and design of learning tasks that promote learning processes and monitor learning outcomes. This paper considers the design and development of a Web based learning environment (JoePM), from an application programmer's perspective.

JoePM supports a task oriented, time dependant model of interaction in which students are given weekly tasks and provided with the necessary resources required to complete them. With the exception of some paper-based readings, all resources are online including videos, links, hints and tips, training materials and past assignments. Individual and team-based student submissions, tutor feedback, peer feedback, communication and team tracking are all managed online.

JoePM has been designed in template form, which enables it to be used for other units of study by simply changing the database content. The system makes extensive use of Filemaker Pro (2000) as a database backend, Macromedia Director (2000) as shockwave, and QuickTime Streaming (1999) for delivery of extensive video content.

Whilst the pedagogic details of the system are dealt with in a separate paper, this paper describes the database structure and technical implementation of the system, as well as detailing issues and pitfalls involved in developing a large cross-platform online system.
Introduction

The JoePM system is an online collaborative learning environment designed for students learning how to manage the development of projects in the School of Communications and Multimedia at Edith Cowan University (IMM 3228/4228 Project Management Methodology) The unit covers all aspects of project management, from the needs analysis and project proposal, to production and launch, and finally the post mortem and the development of project metrics.

It was decided to develop a Web-based application to deliver this unit to help support a constructivist learning environment by creating authentic context, clear communication channels, group work, learner control and the creation of tasks and experiences that foster higher-order cognition and self-directed learning (McLoughlin, & Luca, 2000). Learning outcomes sought in this unit were related to developing personal transferable skills of time management, teamwork, decision-making, conflict resolution and problem solving. Tasks were designed to maintain a focus on the learning processes and professional skill development rather than content-based outcomes.

This paper discusses the development tools used, the use of relational databases with FileMaker Pro, and the implementation of the system. The development of JoePM is based on a constructivist pedagogical framework (discussed in another paper). The application needed to reflect this framework in three functional components:

- student-centred learning activities;
- self-regulated learning activities;
- and learner support tools.

The learning environment is based on student centred learning activities where students were required to solve ill-defined “problems” on weekly team basis. This was supported with on-line content and information, such as streaming video, readings, links to external media, and tips/hints from industry. The students use these resources to develop solutions to ten tasks over the period of a
semester. These solutions are then posted to an on-line forum area and assessed by peers in an anonymous fashion.

Self-regulated learning activities were promoted by students being required to commit to personal responsibilities and tasks within a team of four or five students. This involved initially filling out a "Student Contract" in which time commitments were made relative to a team role. This commitment is monitored by tracking actual time usage through a time-clock system and comparing the estimated times from the "Student Contract". A journal system also allows students to assess themselves as well as their peers through a confidential on-line system which is posted to the tutor weekly.

Students are provided with a range of learner support tools to help implementing their team structure. Individual team members can manage their own records and view the records of others. Project Managers can manage their team members, including options such as deleting members. The system also incorporates a range of general-purpose tools, such as on-line forms (inc bulletin boards), messages of the day, and links to team prototypes.

The main interface metaphor for JoePM is an office. This metaphor provides ready access to the three main areas described above through the use of FileMaker Pro databases. The established metaphors (as shown in figure 1) are:

- student centred learning activities - these include the In tray, filing cabinet and conference centre;
- self-regulated learning activities - includes the student contract, time clock/sheet and the journal; and
- learner support tools - are located within the monitor icon and are available to all users of the system.
The JoePM system is designed to run in both Macintosh and Windows environments. Developed for both platforms, the system has been optimised for Microsoft Internet Explorer 5 or higher, due to the inability of Netscape Communicator 4+ to adequately display Cascading Style Sheets (CSS).

FileMaker Pro 5 was chosen as the database backend for a variety of reasons. Prior experience with the database software within the School of Communications and Multimedia had shown the application to be reliable and relatively inexpensive to install and configure. The application can also be run on either a Macintosh or Windows server with no special hardware or configuration.

When transferring the imm3228/4228 unit into an online environment Filemaker Pro allowed the automatic integration of many of the elements being taught within the original course. An example of the automatic integration can be seen in figure 2.
Figure 2: Automatic integration.

Previously, students had to submit a paper-based contract at assessment time, then use a separate spreadsheet to compile their time expenditure. The Filemaker databases allow the JoePM system to calculate these figures for the students at any given time over the course, and also allows tutors to view any member’s times.

The interface was developed in Macromedia Director 8 and deployed as a shockwave movie. The shockwave compressor generated comparable file sizes to a sliced 800 * 600 image with JavaScript roll-over effects. The shockwave shell was designed to be modular in its use. The desire to create an interactive product, which could be used as a shell for delivering any task orientated course, is rooted in its construction. The ability to perform active scripting on the client side enabled the creation of a shockwave application that inputs data via parameters passed to it within the html embed process, as well as reading in a text file containing module descriptions and database actions.

By utilising a text file, the application can manipulate which sections become accessible within the movie and what action is to be performed upon its activation. This functionality could be extended to allow a generic model to be created which would allow the facilitator of a course to activate only the options of the interface that were necessary.
QuickTime was used in the extensive delivery of video footage, taken from a variety of local multimedia industry representatives. The video was streamed for either 56kps or LAN (T3) connections. Using QuickTime streaming server 3 running on a MacOS X server.

**Database design/relationships**

The JoePM system uses sixteen relational databases. Most of these databases have a many to many relationship with each other. The original design focus was to create many inter-connected databases holding specialist data, rather than larger ones encompassing a larger amount of information. This approach was taken for two reasons. The first was the amount and frequency of use for the system, while the second was the large amount of collation required to bring together individual user records into larger, more meaningful team records.

In a two hour tutorial there can be anywhere from 50 to 100 students accessing the JoePM system at once across several computer labs. This amount of use and the frequency at which the users access the system creates a lot of network traffic. By separating larger databases into smaller ones we can more easily manage the databases and effectively share the system load. Each database action, especially search requests, can be performed faster due to the smaller size of the database itself.

This strategy has proved particularly effective across the university Macintosh network. The effectiveness is also increased if the users access a variety of different databases. Occasionally this method of segregating the load across many databases results in the FileMaker application failing to return a particular action. This fault is more pronounced over slower Internet connections.

Team members continually make different varieties of database entries in the course of the unit. The need to correlate a number of user’s individual records into a larger team record highlighted the need for a relational database structure. The design structure adopted for the JoePM system was to use a database that draws data from a number of smaller databases and then presents that information to the user. This structure is highlighted in figure 3.
The system correlates relevant data and utilises the power of FileMaker to perform in-line database queries while processing the current query.

An example of this interaction is connecting the journal and time entry databases, shown in figure 4. Although these two databases do not have any relationships defined within the databases themselves, they do have connections made when displaying the data in a meaningful manner. Summary times are extracted from the time entry database using self-joins. This data is combined with the initial
student contract via an in-line query to the user database. This information is then combined with the user’s self-assessment from the previous week, again via an in-line query. All this information is presented in one page – from which users complete the self and peer assessment tasks for the current week.

Figure: 4: In-line actions within a webpage.

This method essentially replicates the function performed by creating many to many relationships between databases. The difference is it only creates a link to the data when necessary, and only on the web front. This reduces the number of inter-related databases, which in turn reduces the load on the whole system.
Implementation issues

The system was designed for relatively high-end computers, typically iMacs or Wintel 98 machines. This target specification adequately covers the majority of users within the expected scope of the application. The system itself is hosted on a Macintosh G4 with 128mb RAM, running MacOS 9.1, using Filemaker’s own built in web server.

Although there have been no performance issues in relation to the operation of the JoePM system, averaging 4000 database hits a day within the first week of operation, a variety of technical problems have been encountered that are inherent in a large cross platform system.

The biggest problem encountered has been ensuring the correct version of the shockwave plug-in has been installed on the user’s browser. A high proportion of remote users, using Windows, have reported what we have called the “Black screen of death”, when attempting to connect to the JoePM system over a standard 56kbps Internet connection. This is the shockwave movie attempting to load but failing to finish downloading, thus leaving a black window. The problem has been linked to shockwave’s inability to correctly overwrite its previous installation with a new version of the plug-in.

Another problem associated with Macromedia Shockwave is its inability to call a JavaScript within the page in which the shockwave movie is embedded. This ability is only compatible with the Netscape range of browsers on Wintel machines.

This lead to the development of dual window system in which the interface window, containing the shockwave movie, is layered over the content window, which contains the database output.

Access restrictions: User types

There are five levels of access restrictions in the JoePM system. These range from administrator access to guest accounts. The system
options and configuration change depending on the user type and the mode of access in designed to be scalar for future expansions.

**Administrator.**

This is the highest level of access for the JoePM system and allows the user to modify the contents of the courseware databases. It is envisioned that this access mode could be developed to allow the user to modify the operation of the system. This could include which parts of the JoePM system were active and what function they performed. Within this section the administrator has the ability to change the deadline for posting team solutions to the conference centre, as well as randomly allocating the teams for assessment and locking the assessment deadline. These three options give the administrator great flexibility in the operation of the conference centre.

**Tutor.**

When a team or user registers themselves in the system they are required to select a tutor. Based on this choice, the tutor can login into the system and view any record that matches their name. This information can be user based - such as weekly self-assessments, time entries, personal information and student contracts. It can also be team based - such as peer assessments, weekly task submissions and total time expenditure per team. As a tutor they have the power to re-assign team members and delete users under their control.

This access provides a mechanism in which tutors can view a student or team's progress at any given time within the semester. In traditional courseware teaching this access to information is usually only available at assessment time. The JoePM system provides up to date information and comparisons between teams, allowing the tutor to proceed accordingly.

**Project Managers.**

In an effort to make the system a reflection of real life practice, the project manager of each team is given extra privileges. As a project manager they can re-assign the roles of members within their team
and delete members of their team. They can also manipulate their timesheets, as well as issues such as specifying a project URL address, a team email and selecting a supervising tutor.

Users (team members).

This access type caters for all users who are not part of any other classification. This user type gives access to all sections of JoePM, excluding administration.

Guest.

Guest users are the most basic type of user and allow access the courseware databases and the weekly task tray. This user type was developed to allow the JoePM system to be used for any on-line courseware application.

Summary

The JoePM system has been conceived as a shell that can be used to implement any on-line course. The use of relational databases integrated many of the courseware components of the imm3228/4228 Project Management Methodology unit, facilitates real-time reporting of information for tutors and students. This automatic integration, combined with the easy to use development tools allowed the creation of a sophisticated user experience. Although the JoePM system was originally designed to teach project management within the multimedia industry the application boundaries of the system within a teaching environment are endless.

References


In The Air of The Information Age

Scott Smith

The Spin, Lindsay Foyle (2001)

ABSTRACT: This article seeks to discuss the ongoing spectrum auctions in Australia within a wider appreciation of the electromagnetosphere as an ecological region. Moreover, this study posits a central concept for engaging with this pressing communication issue: the idea of our airwaves as a shared public resource, a 'commons'. In extending a critical and ecocultural analysis to our expansive blue skies, the argument for greater public participation in spectrum management and greater social justice in cultural communications policy should become clear in a variety of ways. By historically grounding the appropriation of airspace by governments worldwide in a cultural, political and economic context, the article then moves to observing more recent communication policy developments in Australia and internationally, particularly in the U.S.A. and New Zealand. In predicking this analysis on notions of the electromagnetic commons, a diverse and valuable dimension to the complex but interrelated issues at the crux.
of spectrum management and communication policy takes shape: from regulation, ownership, access, and our need for an invigorated public sphere, to our concerns for social justice and ecologically sustainable futures. This article seeks an ecological conception of rights to the airwaves.

Introduction

Contemplate for a moment the diverse atmospheres we can experience: the atmosphere of social gatherings; the atmosphere beside a body of water late in the afternoon; the atmosphere high on a mountain; the atmosphere inside our homes, our workplaces, and our cars. What sort of space is the air around, above and within us? Where do we begin a discourse on a complex and life-giving element that is largely incomprehensible to our hierarchy of senses? Indeed mixed arrays of atmospheres nurture our lives – but are always and resolutely integral, collective and essential. Should our atmospheres be bought and sold at market? Is this space to be owned by the highest bidder, the state, or the public? These opening lines of questioning set a broad base for the analysis of spectrum management and policy in Australia that follows. Simplistic questions such as these serve a holistic and ecocultural purpose to which this article aspires. They return the debate to ‘human-scale’ dimensions of understanding. This is after all, a deliberation on the electromagnetic workings of a locus ‘nobody can see, taste, smell or feel’.

Subsequently, this is partly an exercise in furnishing a wider cultural and historical understanding of how extra-terrestrial space came to be enclosed and appropriated, exploited and legitimated. By impelling neuron activity and a linear flow of ideas, the convoluted contemporary milieu of a globalised information age should become comprehensible. In promoting more ecocentric strategies for Australia’s communications future a ‘big picture’ and long-term view should emerge. In part, these proposals for new ideas and directions in social and cultural communications policy are a response to the consistent calls from two of Australia’s most prominent communications scholars, Barry Jones and Trevor Barr. What distinguishes these arguments from others is an engagement with ‘cultural ecology’.
We now live in a ‘risk society’ where ecological issues confront us at every turn. What animates the ecoculturalist methodology that this article develops, is the claim that “all communication is biospheric in its action”, an assertion which draws attention to the mutuality and entwined relations of communication (indeed all activity) and ecosphere, and extended in this case to spectrum-related communications (Jagtenberg & McKie, 1997, p. 2). It is a position that concerns itself with the complexity of the ‘semiosphere-biosphere dialectic’; between ‘industries and ecologies’; between the cultural semiotics of popular media, discourses and imagery, and the rhythms and cycles of the natural world (1997, p. 2). Furthermore it involves an attempt to ‘decolonise’ and ‘deterritorialise’ our ecologies: to free them from the propertied regime (Giblett, 1997, pp. 128-139). In this case, it is the institutional management of the electromagnetosphere that is under review. If only for a short time, this research hopes to release the intricate workings of the electromagnetosphere from the constraints of economic managerialism. A critical and ecocentric insight should unravel. The aim in mobilising this diverse and slightly radical framework is to complement and enliven the contemporary approach to ‘spectrum management’ - an approach based on a narrow and anthropocentric economism.

Our attempts to grasp our contemporary cultural and ecological maelstrom are played out in our communications media. The understanding that this research works from is that “the public realm and the public” are now to be found in the popular media of television, newspapers, magazines and photography. This is “the place where and the means by which the public is created and has its meaning” (Hartley, 1992, p. 1). Notions of Australian ‘publics’ and ‘public realms’ must be mobilised in debating the momentous changes to our mediasphere (and semiosphere) in the coming decade. Recent mainstream discussions of spectrum management have failed to address the role of the public sphere when it is clearly at issue. Only in identifying and reiterating our electromagnetosphere as a unique and rare Australian ‘commons’ can we forge a space for addressing the role of the public sphere and more incisive notions of ‘the public interest’.
Importantly, it is the semiosphere of popular media that acts as a locus for cultural meanings and debate, for making sense of the world. We live in an increasingly visual and televisual world. The Australian mediasphere nurtures a ‘promotional culture’ (Wernick, 1991). Our understanding of, and communication with, our ecologies are highly mediated. New communication technologies, digitisation, the fragility of public broadcasting, and the prospects of a networked society have multiple potential effects - from disruption to enhancement of our public forums and ecocultural understandings. But the future is not a technologically determined one: it is still “unclear what the eventual mix will be between satellite, cable and terrestrial digital broadcasters” (Herman & McChesney, 1997, p. 47). This cultivates uncertainty and complex relations of power but it should be clear that our media- and semiospheres are the regions where our challenges, strategies and problems can be canvassed. The pressing question would seem to be whether this is possible in a completely corporatised mediasphere. Could the provision of spectrum for local communities to broadcast their own stories and narratives hasten our shift into more ecologically sustainable modes of living?

Orientations: The Globalised Order of the Information Age

Atmospheric space – like all ecological space – accommodates the new world order of the global market economy. In today’s wired economic order, communication is the cornerstone – with clients, consumers, governments – and the dependence on airwaves (not to mention airplanes) for business operations are as clear as our summer skies. The giant media and telecommunication conglomerates – the power players of the new economy - understand this better than most. Jeremy Rifkin (2000) notes within this context that ‘spectrum real estate is likely to become the single most important asset in the world’ (p. 227). What regulatory role is the nation-state to play in this new economic order where spectrum is such a highly prized asset?

In Australia, as in many nations, the Federal Government clings to a regulatory role that is under threat from the political tides of neoliberalism and ‘small’ government, the economic tides of free-
market competition, and new technological developments in communication, especially digitisation. The Australian Communication Association (ACA) seeks a suitable path of spectrum regulation and management while the Treasury incorporates the forecast revenue from the spectrum auctions into their annual budget. This narrow economism perpetuated by the Coalition government has most recently suffered a blow with the economically disappointing results of recent spectrum auctions – the Government budgeted for $2.6 billion last year but has so far collected only $1.3 billion and, most recently, the May datacasting auction has been postponed. These results are due to a variety of conflicting factors that I will return to, but at this point the intention is to illustrate the narrow economic and anthropocentric terms that dominate discussion of spectrum allocation. As a spokesman for Senator Richard Alston has so eloquently stated recently: “We are in discussion with the ACA about how best to allocate spectrum to ensure it delivers the best possible outcome for consumers and taxpayers” (cited in Mitchell, 2001). Can this debate be reconfigured to incorporate ‘best possible outcomes’ for citizens (including rural and regional denizens) and our ecologies?

The challenge to greater public participation in communications policy derives from the entrepreneurial players of the new global information order. Having served many decades under the regulatory regimes of government, these players have emerged as powerful new components of the global information empire, cloaking their operations in corporate law and strategic alliances. They the transnational corporations (TNCs) and the global economic institutions that nurture them, such as the World Bank, the International Monetary Fund (IMF) and the World Trade Organisation (WTO). Those that concern this study are the global media and telecommunications empires that seek to secure access to spectrum in Australia: the media companies of News Limited, PBL and Fairfax and telecommunications giants Telstra, Optus, and other international players such as Vodafone and AAPT. They have eagerly adapted to technological change, and are reliant on the new communication technologies and electronic networks for their operations. They secure spectrum worldwide to broadcast the corporate agenda under the guise of information and entertainment. In short, they are in the business of securing access to our ‘living rooms’. They are also in the business of maintaining access to the
corridors of power. Only these giant conglomerates have the financial and political power to secure large parts of the electromagnetic spectrum. To what extent will this change the relationship between the public, our ecologies, and global commercial enterprise?

A number of questions must be posed at this point, some general, others more defined. They serve as a reference point for seeking clarity in the contemporary power relations around spectrum management. We know that the institutions that constitute the new global media empire are absorbing huge benefits both financially and politically from their operations. We know also that only they can afford access to large parts of spectrum. What are the ideological motives of these institutions? What will it take to steer them away from unsustainable and exploitative modes of operation? Who are to be excluded, marginalised and subjected in the continuing appropriation of electromagnetic spectrum for commercial means? Is there a model for spectrum allocation that can be co-opted to serve postmodern, ecologically sustainable societies? In light of the overwhelming evidence of concentrated power in the new global order, just what can be done to address imbalances? Can notions of a ‘global commons’ and a revitalised ‘public sphere’ offer a buffer against the complete corporate domination of the electromagnetic spectrum? Or would indigenous rights to the electromagnetosphere provide a more politically effective buffer? These questions stimulate the discussion that follows.

*Digging Deep: A Brief History of the Enclosure Movement*

Let us first seek some historical grounding with the aim of creating an atmosphere conducive to thoughtful and critical contemplation. The enclosure and commercialisation of the atmospheric commons has thick and extensive historical roots that sink deep into the soil of the past - at least five hundred years to medieval England. The enclosure movement is often referred to as ‘the tragedy of the commons’, a phrase first coined by an avid proponent of commercial enclosure, the philosopher Thomas Hobbes, (Jagtenberg & McKie, 1997, p. 14). It is predicated on the enclosure, privatisation and commercialisation of land, of space, or more directly, of an
ecological region. The seizure of a common and shared land (or space) that communities had lived and worked with for many generations was indeed tragic for rural communities of the times; it also marked the emergence of a central feature of the space-power relationship so familiar to us today: the concept of private property. In what Jeremy Rifkin (1991) has described as "the revolution of the rich against the poor", landowners and the emerging mercantilist class enclosed the shared commons through subdivision in the pursuit of larger profits, more land and greater power (p. 39).

The printing press as a communication technology facilitated the enclosure movement. Title deeds and rent agreements replaced traditional, oral agreements, legitimating the monetary economy and the intensification of agricultural practices in the quest for profit. Accordingly, the enclosure of 'productive' ecological regions ensued. As the movement gathered momentum, political and legislative measures (also facilitated by the printed document) solidified the new arrangement in the communities of England and Europe, establishing the familiar rule of law and the sacredness of private property we understand so well today. These measures "fundamentally altered the economic relationship between people, and between people and the natural environment, paving the way for the emergence of the industrial and urban revolutions" (Rifkin, 1991, p. 39). It must be noted that they also contributed to a better balance of power in comparison to the feudal system. We may find a similar organisation of economic and cultural activity around new communication technologies in our own times. The explosion of electronics and computing communication tools similarly intensifies the dominant ideologies and actions of our modern world. Whether they propel the enclosure movement further or reconstitute our social and property relations completely, is another question altogether.

The history of commercial enclosure is an evolving meta-narrative of power over space, of order over a chaotic and unpredictable nature - a subjugation of nature (or space) to market forces. Moreover, it is the subjection of land, space and ecologies to the cause of capitalist enterprise. As Raymond Williams (1980, p. 78) has so aptly stated, for a period (the eighteenth century) so concerned with order, the enclosure movement was "notably disorderly and corrupt" (p. 78). He asserts that
Our first really ruthless capitalist class, taking up things and men [sic] in much the same spirit and imposing at once profitable and pauperising order on them, were those eighteenth century agrarians who got themselves called an aristocracy, and who laid the real foundations, in spirit and practice (and of course themselves joining in), for the industrial capitalists who were to follow them.

(Williams, 1980, p. 79)

This marked the beginning of a powerful appropriation of ecological space, clear-cutting the path for the profound consequences we can find in today’s world. A cultural rift divided the natural world and the social world of the community as the will to dominate space and nature became an ideological, philosophical and, arguably, a religious framework for the hegemonic order: a mutually reinforcing framework predicated on the increased concentration of wealth, space (or land) and power in the hands of a privileged elite. The rural communities who shared and lived closely with the land for centuries were to be forced into a new relationship with the natural world vis-à-vis the urban industrial town and city. The natural world fell to a crude form of ‘management’ – founded on reason and manifested in the scientific method – and became a colonised space, exploited and appropriated towards cultural, political and economic ends. The social world, innately tied to the ecological world, again turns further from sustainable, pre-capitalist modes of organisation, and towards a mythical place independent from nature.

Of Land, Sea and Skies: The Momentum of Enclosure

The rise of European empires and the changing global power relations (or geopolitics) were a result of colonising the oceans; of securing trade routes, fishing grounds, and communication lines to colonies and trading partners. Deep historical roots can again be unearthed as “the commodification of the land commons was [only] made possible by the conquest of the oceans”, a notion that can be traced back to the great navies of ancient times (Rifkin, 1991, p. 53). Here the links between military, industry and government and their concerted influence on ecological space begin to solidify and take
form. The ascension of the nation-state, founded on principles of territorialisation and enclosure of ecologies, and administered by an apparatus of industry and military, would culminate in a dramatic climax with the outbreak of World War I. Like all modern wars of the last century, battle was waged over territory. The war would stimulate technological developments and improved communications, notably radio. Importantly it was, first and foremost, a war on the natural environment.

It was at the curve of the century with the invention of a ‘flying machine’ by the Wright brothers that political, commercial and military interests collectively arched their necks to the skies with an eye to mastering that space and appropriating it for the benefit of the nation-state. Rifkin (1991) incisively concludes that ‘the enclosure of the terrestrial and oceanic commons established a historical precedent for the enclosure of the remaining ecological realms of the planet’ (p. 58). As a result of oceanic colonisation, many regions of the world were now known, mapped and appropriated. The precedent was set and remains. For ages the skies were the magical canopy high above civilisation. They were the canvas for cosmological motions and a blanket that nurtured and secured life. The new world-view would obliterate such pantheism. The accumulating drive for power, progress and advancement had released the flying machines and let loose atmospheric pollution, heralding the arrival of the humans in the heavens. A new frontier had opened.

The enclosure and appropriation of extra-terrestrial space heightened with the developments of the World War and the devastating role that the airborne military were to play, leading to nation-states claiming ‘the right of total sovereignty over the airspace within their political boundaries’ (Rifkin, 1991, p. 59-60). The refinement of radio broadcasting in these times of conflict and rebuilding would tap the magical qualities of our electromagnetosphere and forever change our communication with each other and with the state. It would also instigate intense interest from government, private, and military interests as the potential of this new communication technology became clear. Toby Miller affirms that:

Governments sought from very early on, then, to exercise control over the airwaves as resources, initially for military
purposes and thereafter to exercise the policing role of property protection, as well as a means to exacting revenue from users of the resource.

(Miller, 1997, p. 48)

The ideological winds would continue to sweep clear a sense of imbeddedness in the natural world with the gradual shift to ‘resource management’. Another war and a new and more powerful communication technology – the ubiquitous television – and the industries that form around it, would further this entangled drive to our present age.

The world today is characterised by international regulatory agencies, multilateral agreements, air corridors, and air rights laws and zoning within nations (Rifkin, 1991, p. 61). It is a world of highly regulated, busy airwaves, and mediated, and often commercialised, public spheres. Rifkin asserts, “in less than one hundred years the great atmospheric commons has been divided up, nationalized, partially privatized, and reduced to a commodity negotiable in the open marketplace” (p. 61). At the beginning of the 1990s, the electromagnetic commons were hustled further towards the quasi-religious abstractions of ‘the market-place’ Deregulation of the airline and telecommunications industry would follow. This synopsis of the wider scope of the enclosure movement and its ideological underpinnings, and the managerial mastery of ecologies that results, illustrates the world-view that frames the management of the electromagnetosphere in Australia.

The Cultural Topsoil: Reorientations in the Information Age

In a roundabout way we return to contemporary times. Here we focus more specifically on the use of the electromagnetic spectrum for broadcasting in Australia. The history of broadcasting across our airwaves in Australia has been well documented and I feel there is little room here to retrace these steps (see Miller, 1997, pp. 47-58. Cunningham, 1997, pp. 90-111). However it would be useful to reflect on recent media and communications developments both in Australia and internationally. Of note is the way mediated
communication has become a pervasive part of our lives today. The central influence of television and radio on our day-to-day lives is visible in the postmodern savviness of popular culture, the high levels of media literacy, and equally in the highly regulated environs of the broadcasting industry. The communications sector is also a crucial part of the 'new' Australian economy contributing greatly to government revenue, particularly via spectrum licenses and auctions. In this traversal of our unfolding communications environment are there concepts and developments that display strategies for a sustainable ecology of culture and communications?

For Trevor Barr (2000) the 1990s was a period where economic notions of efficiency and competition were the 'centrepiece' of public policy (p. 210). This narrow economic approach to policy has left us with a peculiar media and communications environment, particularly in relation to international comparisons. It is peculiar in the sense that we now straddle a period between an existing analogue system of broadcasting and the inevitable digital future that awaits us. This digital future promises much for Australian media and culture, yet the incumbent Coalition government has far from embraced it. For example, regarding spectrum allocation a form of protectionism operates enclosing the dominant existing media broadcasters in relative security to at least 2005. The prospects of digitisation throw this form of protection into disarray as the entrenched basis for spectrum regulation – that of scarcity – dissolves with digital compression technologies (Jassem, 1998).

The communications sector in Australia is highly regulated. The Productivity Commission initiated an inquiry last year to address the complicated future of media regulation in Australia. Although a lengthy, multifaceted and detailed report, the Commission sees 'digital broadcasting as Australia's best chance for a more diverse and competitive broadcasting system' (Thomas, 2000, p. 10). For Thomas, the inquiry has produced a 'double argument': 'that regulatory obstacles to new media may handicap their growth for many years; and that the existing framework of media law and policy needs to be redesigned for life after analogue' (p.11). The Commission seeks greater efficiency at one level, yet it also draws attention to spectrum as a valuable public resource, giving credence to the idea of an electromagnetic commons. This article is attempting to intervene in the context of a social and cultural policy framework.
that recognises the common ownership of spectrum by the public. An examination of spectrum allocation and management will bring this absence of discourse on public resources to the fore.

Within Australia Trevor Barr (2000) has noted a ‘shift in the prime role of regulation from notions of serving the ‘public interest’ to monitoring ‘structural regulation’ – the purpose of which is to facilitate unfettered market-based decision-making’ (p. 212). It would seem that spectrum regulation has shifted partly to this form of ‘structural regulation’ although not completely. The conditions placed upon potential datacasters indicate an implicit form of protectionism that constrains market-based decision-making. And the ‘public interest’ is still a requirement in allocating licenses to broadcast. Yet the two forces of protectionism and public interest sit uneasily together. Surely it is in the public interest to free Australian citizens and audiences from the oligopoly of the Australian media corporations? Stuart Cunningham and Angela Romano (2000) have expressed similar concerns at the political influence the corporate media wield in Australia. Although the floodgate of digitisation, multichannelling and new competition may potentially whither the media corporations influence and power, could they further erode our public spheres? Do we need to take a precautionary approach when debating the profound uncertainties of a digitised and diverse media arena?

Our current system deals with existing broadcasters differently from other commercial users of spectrum. Julian Thomas reminds us that ‘broadcasters are allocated spectrum without charge within the broadcasting services bands by the Australian Broadcasting Authority (ABA)’ while other commercial users must purchase spectrum at auctions orchestrated by the Australian Communications Authority (ACA) (2000, p. 11). As the constraints of spectrum ‘scarcity’ unhinge with new digital technologies, Australia’s broadcasting corporations increasingly appear to wield substantial and dangerously influential power over media and communications policy specifically, and our political landscape in general. The incumbent regulatory regime with its datacasting restrictions and subsequent auction ‘flop’ and its licensing system that favours existing broadcasters, illustrates the influence of the Australian corporate media quite clearly.
In Australia our commercial landscape is peppered with the operations and strategic alliances of transnational corporations. Entrenched oligopolies of broadcasting media corporations pervade our semiosphere. Globally economic institutions like the World Bank, the IMF and, more recently, the WTO, survey and police national markets. The international telecommunications accord of 1997 was a manifestation of global corporate influence which removed ‘one of the most basic regulatory powers’ of national government: ‘the right to determine the terms and conditions on how communications are structured and accessed within their borders’ (Rifkin, 2000, p.225). David Suzuki and Holly Dressel remind us that

the force driving this takeover of the world is not military might, as it was for the great political empires of the past. Today power is no longer the exclusive prerogative of the nation-state. Now it is increasingly exercised by private corporations; and the change has been revolutionary.

(Suzuki and Dressel, 1999, p.187).

Power is now dispersed across national borders, with global media and telecommunication corporations vying for control and influence within these new power configurations. Herbert Schiller perceives a new media order of “transnational corporate cultural domination” where “private giant economic enterprises pursue – sometimes competitively, sometimes co-operatively – historical capitalist objectives of profit making and capital accumulation, in continuously changing market and geopolitical conditions” (cited in Morley & Robins, 1995, p. 13). Similarly, Herman and McChesney have concluded: “it was no longer appropriate to speak of American cultural imperialism, as much as one should speak of transnational corporate cultural imperialism with a heavy American accent” (1997, p. 40). Again the historical imperative of capitalism is emphasised: deep historical processes have moulded the imbroglio we find today. Corporate media influence is real and in the Australian context of spectrum regulation and datacasting, safeguarded until 2005. David Morley and Kevin Robins astutely summarise this ‘restructuring of the global media’.
We are seeing the restructuring of information and image spaces and the production of a new communications geography, characterised by global networks and an international space of information flows; by an increasing crisis of the national sphere; and by new forms of regional and local activity. Our sense of space and place are all being significantly reconfigured.

(Morley and Robins, 1995, p.1)

As our senses of place - and importantly our sense of ecological place - are 'reconfigured', new communication strategies and concepts must be mobilised as a precautionary measure against complete commercialisation by media corporations. There is a need to tap into the 'new forms of regional and local activity' through greater access to production and networks. The provision of spectrum for communities and institutions such as universities, schools, libraries, and environment centres, would seem an ideal model for complementing an overly commercialised mediasphere. Are there international developments in this field of inquiry that suggest paths towards more ecologically sustainable models of communication? This article now turns abroad for some answers.

Spectrum Management: The U.S. and New Zealand Experience

In this section two contemporary developments in the U.S. approach to spectrum management are explored. Each development represents two distinct paths that spectrum management may take. In this case the U.S. federal communications body, the Federal Communications Commission (FCC) are the institutional regulator under review. Firstly, the consideration of a paper presented by Harvey Jassem (1998) who proposes an examination of a number of possible 'post-spectrum scarcity' scenarios. Jassem explores recent movements within the FCC and submits a model for 'zoning' spectrum. Jeremy Rifkin (2000) has traced an opposing and more disturbing trend within the FCC. He finds a push for a 'one-time massive sell-off of the entire band to private broadcasters', and a move to private 'spectrum real estate' (p. 225). In rounding off this American research I will also briefly peruse developments in New Zealand
where Maoris have successfully claimed rights to the airwaves as a 'resource'. Although speculation of the complex legalities around indigenous rights to Australian airwaves is beyond my expertise, the issue nevertheless remains a pivotal site for exploring ecologically sustainable models for our communications future.

In January 1997, the FCC established an Unlicensed-National Information Infrastructure (U-NII) whereby three bands of spectrum with relatively low transmission power and 'technical guidelines designed to permit multiple simultaneous users' could operate at a general community level of broadcasting (Jassem, 1998, p. 16). As this form of broadcasting would not require licenses from the FCC, and is localised by transmission restrictions, Jassem believes that this will radically change the way 'regulators think of spectrum' (p. 17). It may indeed as Yochai Benkler claims, 'open the possibility of stepping outside the "resource management box"' and moreover, that it 'will provide a component of the information infrastructure that is not owned by anyone' (cited in Jassem, 1998, p. 17). As the U-NII brings into question federal regulatory controls and the power of incumbent broadcasters, so Jassem seeks a new approach to spectrum management in this multi-faceted landscape. His preferred model is to 'zone the resource' within the new knowledge that 'spectrum is large enough to accommodate all users, but complex enough that it will be zoned in order to maximise the benefits accruing from it' (p.22). Jassem asserts that a 'zoning-based policy', in recognising the end of spectrum scarcity, would 'enable widespread participation in our electronic communication systems', forging a system 'far more diverse, local, democratic, and free from government restraints/protections' (p. 25). This zoning model would appear to facilitate the kind of argument put forth in this article: a model that would enhance localised and ecological communication.

Although Jassem (1998) remains sceptical about the political likelihood of complete deregulation of the electromagnetic spectrum (p. 19-20), Jeremy Rifkin has unearthed more recent developments within the U.S. communications policy domain that may demand greater consideration. Rifkin (2000) cites a report entitled 'The Telecom Revolution: An American Opportunity' which proposes a conversion of 'the entire electromagnetic spectrum to private property to be freely used, sold, leased, or otherwise developed' (p. 226). This influential movement within the U.S. puts forth the claim
for spectrum 'to be treated exactly like any other property' where 'owners would have exclusive rights to control its use, exclude others from using it, and determine the conditions upon which it can be sold to another party' (p. 226). The U.S. Congress have already held hearings on the ‘sell-off proposal’ and Rifkin claims that 'observers close to the communications industry believe that it is only a matter of time before the spectrum is transferred into private electronic real estate' (p. 226). As he aptly points out, 'other nations will be encouraged to follow suit, eventually transferring the entire spectrum around the world to privately traded spectrum real estate' (p. 226).

As close cultural allies of the U.S., Australia will no doubt monitor these developments with interest. The potential threat to our fragile public spheres (and in turn our ecologies) that a shift to 'spectrum real estate' would represent, brings into sharp relief the responsibilities of the nation-state in an age of corporatised information flows. 'Without public ownership of the spectrum', Rifkin (2000) concludes, 'the citizenry becomes beholden to a handful of media companies for access to the means of communicating with one another in a highly sophisticated network-based civilization' (p. 227). It would appear that an implementation of an U-NII policy or a ‘zoning’ model may not be enough to stifle the corporate enclosure of the electromagnetosphere. Do we need something more fundamental and legally binding? Is the concept of a commons enough?

The issue of indigenous rights to airwaves is complex. Rather than intervening in any legal discourse, this article seeks quite simply to maintain that the electromagnetic commons remain free from complete private ownership. It is also the conviction of this cultural ecologist that indigenous knowledges and narratives are a vital part of any ecologically sustainable society. The key concept here would be a unification of indigenous rights to all ecological regions with the notion of ecological sustainability. The success of a Maori claim to airwaves in New Zealand last year has set off a similar claim here in Australia. The Maori argument is based on the dominant perception of spectrum as 'a resource', and that under the Waitangi Treaty of 1840 'Maori have a claim to that resource just as they have a claim to fishing or mineral rights' (Dodgson, 2000). In the absence of a treaty the Australian debate will unravel differently, but
nevertheless, the precedent has been set. There is no doubt that the ecocultural tools of decolonisation and deterritorialisation would find symmetry in these claims. And in the interest of our future, both in communications and ecologically, we should track these ongoing developments with a critical eye.

Conclusions

In this age of late capitalism, the Australian cultural landscape and mediasphere are in transition: we lie somewhere between the old economy of the nation-state and the new global economic order; between an analogous communication infrastructure and a digital one: all in the hundredth year of Federation where the future is 'what we make it'. Yet more pertinent is our implication in the new global order of the information age. Our cultural, technological, economic and military ties to the U.S. define our information future. In these ways we may be clamped to the American developments of spectrum management. Only when we take responsibility for the ecological consequences of U.S. economic activities and policies – which are often models for our own – can the shift to sustainable societies really begin.

Establishing where the interests of the U.S. lay holds the key to understanding where we may end up in the crucial, coming decades. James Carey reminds us that "electronics, like print in its early phases, is biased toward supporting one type of civilization: a powerhouse society dedicated to wealth, power and productivity, to technical perfectionism and ethical nihilism" (1989, pp. 171-72). This civilisation model is sure to have devastating ecological impacts at the global level. There is, however, a strong current at the social and cultural level for forging our own strategies and for moulding our own future. It should involve the creation of more holistic and ecocentric approaches to management. As I have elaborated in the latter half of this article, this may entail a more cautious approach to spectrum management and a wider canvassing of international developments. The New Zealand experience would prove a solid starting point.
This article is a search for measures that can be adopted within our cultural-, media- and semiospheres. It is couched within a wider and pressing cultural project of “re-opening the global commons” (Rifkin, 1991, p. 312). Through greater dissemination and understanding of this concept, the dominating and ecologically destructive operations of TNCs and nation-states can be challenged. Our public spheres must be prioritised and resuscitated. For Herman and McChesney (1997) the ‘battle’ for ‘media reform’ must be “engaged locally, nationally, and globally” (p. 204). They believe ‘the ultimate goal’ must be ‘the establishment of a global, non-profit public sphere to replace, or at least complement, the global commercial media market’ (p. 204). The narrow and economic regimes of our nation-states ‘must be forced to cease their exclusive service to the TNC community, regardless of social and political costs’ (p. 204). This must first occur at the local level through unchaining the narrow bonds of managerialism; through provision of spectrum for unlicensed community use; through further investment in community broadcasting and infrastructure; and by tying the quest for ecological sustainability to communication policy.

In the search for alternative paths to a sustainable society it would seem wise to consider our ‘assets’ as a culture. I believe our most significant cultural contribution must arise from the merger of three key concepts: the ‘the public sphere’, indigenous rights to our ecologies, and ecological sustainability. Indigenous cultures have a critical role to play in our cultural and communications future, both locally and globally, which is only just beginning to be recognised. But a huge cultural shift towards a greater understanding of our current ecological, cultural and communications predicament is required. It is a measure that requires foresight rather than a reactionary response. Wider discussion of our electromagnetosphere as a ‘commons’ will open up a crucial component of an otherwise dry and narrow debate. It is time to reconstitute a ‘human-scale’ understanding of communication and ecology coupled with the endeavour to reconfigure our notions of social justice and a healthy, culturally vibrant society.

References


visual aids such as diagrams and continuous tone illustrations (photographs).

The metrics of cognitive skill improvement of text-based communication by visualization are discussed in the body text below. The academic research and derived literature regarding this important subject have already been done reasonable justice, (Mayer et al).

But what if the communication involves the reader assimilating matrices of data rather than pages of text? And what if the “reader” is a control room operator looking at a computer monitor full of data matrices, and the operator is in charge of a high-pressure chemical reactor, or a blast furnace, or a nuclear reactor? These are reactors that cannot be “looked in” and so what is going on inside the reactor can only be visualized by interpreting the data (temperature, pressure, fugacity, pH, Eh, and so on) collected by the instrument sensing probes. Realising that the reactor is blocking up at one end, or is generating a hot-spot that will eventually puncture the reactor, or some other sort of reactor problem is happening, can only occur if the control room operator can visualize that a deleterious trend is going on by interpreting the data matrices in front of him.

Do all control room operators have this visualization skill? From the author’s experience: No, very few. This observation is supported by the important work in examining different graphics abilities of students from different learning environments, (Cox and Rowlands).

As part of the work for a Masters of Communications degree at Edith Cowan University, this article describes some proposed research to elucidate:

- Current level of data visualization technology and usage
- Areas for future research to apply appropriate technology
- Develop an appropriate research methodology
- Develop metrics for measuring effectiveness of data visualization
- Develop a set of potential software architectures to provide effective, on-line reactor visualization from instrument captured data.
Situation Analysis

Control room operators (CROs, or the so-called "process technicians") in the resource and manufacturing industries have traditionally reached appointment in this role by exhibition of intellectual skills, or by longevity of employment, or both. Rarely is there a pre-employment assessment of logic or visualization skills, and if such assessment is performed, it is only relative, and not measured against a pre-determined set of appropriate industry ranks, (Chandler & MacLeod, 1976, 1988, 1996). It is questionable whether such preselection would achieve a dramatic improvement in "control" unless predictive visualization is provided to enable the CRO to "see" what is going on, and may develop in the near future, inside a closed reactor such as a high-pressure leach vessel or a furnace.

Installation of computer-based control systems in the resource industry sector commenced in this country in 1972 with the installation of a Fox 2/10 (an industrially "ruggedized" Digital PDP-8 mini system with 128K of RAM) at the Mount Isa Mines (MIM) smelter expansion. This system did not have a monitor, and simply provided a sequencing logic previously provided by a large array of relays, (author). The CRO was still confronted by a long gallery of analog readouts, plus a series of alarm panels that warned of problems that were already existent. This did very little to assist the CRO to control the plant, but it was the start of a process that may now be at a state of the art that will allow predictive visualization to be developed.

During the intervening 30 years since the MIM installation, computer systems have developed exponentially in power and speed, and the control systems architecture has gone through several cultural revolutions. The evolutionary development of parameter-sensing probes has progressed in parallel, such that process data can now be collected accurately, quickly, frequently and reliably, stored in high capacity relational database systems, and this data may be selectively massaged and displayed as "information" on high resolution monitors.

Some developments of data visualization have already occurred, but these do not yet satisfactorily meet the needs of the "closed reactor application". As software visualization tools and the hardware
required to support them fall in cost, more use is being made of the power of advanced 3D visualization to provide insights into complex data. The tools available for creating visualization provide very powerful development environments (Linden; Tan; Fenn; Dresner and Strange), but there is little guidance to help users improve their understanding of the data. Software developers can do some things with the existing tools but the results are not always productive.

Since the start of 1999, a number of software vendors have introduced visualization products that take the extra step in providing not just tools, but specific metaphors targeted at a particular end use. Inxight has a specific visualization metaphor that enables a large number of concepts and relationships to be viewed and navigated on a single screen, (Gartner). It is used in products such as Microsoft's Site Server for understanding the structure of a Web site and Comshare for viewing large organisational structures. Visual Insight Advizor targets customer behaviour analysis and product/brand analysis in the retail and financial services industries, (Gartner). First Data uses Advizor to add visualization to other applications such as fraud and debit card analysis in the financial industry. Finally, NetMap from Alta Analytics provides a relationship based links between objects such as events and people, and has drill down capabilities, (Gartner).

All of these developments are working from either a static database, or a database that changes relatively slowly with time. For example, data mining is now catered for by a number of vendors that offer visual representation of clustering to ease search and retrieval in large document bases (eg Cartia, Semio, and Trivium).

To cater for the "closed reactor application", the database of rapidly changing data, where the data can change one hundred times per second, requires an interface or middle ware to show the trending, and then the metaphors adapted using fuzzy logic, to interact with a digital graphics package to provide the HMI (human machine interface). General Electric have developed Cimplicity to show the animated graphics, but this is restricted to 2D and is relatively simplistic, (author). Honeywell have developed Unifonnance as appropriate middleware between Oracle and Cimplicity, (author). Development of the 3D animation metaphors needs to be pursued to allow the closed reactor application to be effective.
Finally, it is necessary to consider the level of visualization that may be effective with control room operators, and also to consider the significant variation in absorption of the visualisation by the control room operators.

Authoritative Reference Work
A full literature search is obviously part of the research project. In the interim, the very appropriate research in this area that has been reported in the literature is the on-going visualization work that has been, and still is being carried out, at UCSB (University of California, Santa Barbara). Professor Richard E. Mayer has lead this work. Starting with the visualization of text-based information, over the last 12 years, this has slowly started to transfer to examination of the visualization of databased information. Notable published research papers are:

- "Systematic thinking fostered by illustrations in scientific text" 1989
- "When is an illustration worth ten thousand words?" 1990
- "Animations need narrations: An experimental test of a dual-coding hypothesis" 1991
- "Graphs as aids to knowledge construction; Signalling techniques for guiding the process of graph comprehension" 1998
- "Maximizing constructivist learning from multimedia communications by minimizing cognitive load" 1999
- "Coherence effect in multimedia learning" 2000
- "Cognitive constraints on multimedia learning: When presenting more material results in less understanding" 2001

These papers provide valuable research techniques suitable for this project.
Methodology

To research the topic, it is planned to use the research project methodology outlined in Bouma (2000), “The Research Process” 4th edition. This methodology has the advantages of:

- being based on social science research, where some questions are best answered before others are raised;
- combines both quantitative and qualitative research methods;
- is oriented to tertiary education pedagogy;
- has been well tested in a tertiary education environment.

Bouma’s process of social science research is divided into three phases.

Phase 1 involves identifying the problem then narrowing and clarifying the problem, then restating the problem as a hypothesis or research objective. The variables are then defined, and ways of measuring them are developed. (In this case, the metric techniques used by Mayer (see above); Moon and Pithers, “Improved learning through effective training” (2000); and Cox and Rowlands “The effect of three different educational approaches on drawing ability; Steiner, Montessori and traditional” (2000), will be valuable starting areas). The research design will evolve from the combination of the methodology and the techniques.

Phase 2 is the data collection stage, which includes (particularly for this study) a discussion of ethics issues, and also gender, ethnicity, and age because, based on the author’s own life experiences, all are expected to affect the data.

Phase 3 involves the analysis and interpretation of the data.

The methodology of data analysis, massage, and interpretation will additionally be mentored by adherence to the terminologies, calculation and massage methods, and the reporting protocols that have been rigorously proven by Runyon et al, “Fundamentals of Behavioural Statistics” 9th edition (2000).

This methodological sequencing will be applied to the perceived and proposed steps listed in the introduction above.
Assess the current level of data visualization technology and usage in the process control arena
Develop an appropriate research methodology based on Bouma
Develop metrics for measuring effectiveness of data visualization based on the previously noted researchers
Develop a set of potential software architectures to provide effective, on-line reactor visualization from instrument-captured data.
Identify areas for future research to apply appropriate technology

External Support
Industry support has been discussed with major control systems manufacturers, and access to hardware and software is fully expected from these sources.

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Rocks in Their Heads:  
The Landscape and You Experience

George Karpathakis

ABSTRACT: During the making of the television series Landscape and You (1996) the video crew spent some of their time collecting rocks from the landscape. This article explores historical and theoretical material to understand why the crew collected rocks. Included in the article are a history of humanity’s relationship to rocks, the psychology of collecting, the meaning of collections and the role of landscape in the creation of meaning. The article compares the behaviour of the crew with the material reviewed.

The Rock Collecting Crew at Meeline

During the making of the television series Landscape and You (1996) I spent much time at Meeline Station shooting classic outback Australian vistas. Depending on the season the video crew and I were struck by the variety of views available.

Spring offered a wildflower show of surreal abundance. The salt lakes in high summer appeared as eerie alien landscapes and in winter as inland seas attracting a surprising variety of bird life. Breakaways and rises such as Mt Boodanoo offered almost aerial views. For a city-born and raised crew visual and aural delights lay around every corner and behind every tree and bush. Within some of the breakaways were caves with rock art, and other traces of Australia’s indigenous heritage.

Meeline Station, six hundred kilometres north east of Perth, is located on the pre-Cambrian shield where mountains have been ground down to their roots, the top soil is only millimetres deep and the smallest rise offers expansive views.

The video crew having recorded the panorama would cast their eyes to the ground and pick up rocks. In the evening the crew would sort out their collections and show each other their assorted treasures and explain why they selected this particular rock. Sometimes they
exchanged rocks. It is in this experience that my question found its genesis.

The Question

Why do these city dwellers, Euro-Australians, collect rocks from the landscape, particularly this Murchison landscape? What could I find in the readings, other available materials and observations that would provide answers to the question?

My strategy is to survey the current literature and revisit the series Landscape and You looking for answers. I will test findings against the experience of making Landscape and You.

Rocks in pre-history and history

From pebble culture to Stonehenge, pyramids to engraved gems, magic to cosmetics, rocks have played a major part in human evolution and human development. A broad view of humans’ relationship to rocks with an archeological, anthropological and historical perspective is provided by Shackley in the engaging book Rocks and Man (1977).

Shackley informs us that it was the study of rocks and their formation in strata that initially gave us an understanding of the age of the Earth and its formation, and through the study of fossils a grasp of the evolution of life on Earth and its antiquity. Without rocks it is quite possible that life would not have evolved at all.

Shackley (1977, p. 24-25) defines both rocks and minerals. Minerals are the fundamental units of rocks, which are, in Shackley’s terms, ‘homogenous solids of definite chemical composition...formed by natural inorganic processes’. Rocks are defined as ‘no fixed chemical composition’, mixed and varied, heterogeneous, having “no definite shape of its own”.

In her introduction Shackley proposes a two-fold connection between ‘man’ and rocks: ‘man in rocks and man with rocks’ (1977, p.19). The ‘man in rocks” is fossil “man”; the much-sought evidence of the genus Homo’s evolution on Earth, while the ‘man with rocks’
refers to the use and exploitation of rocks by humans as documented by archaeologists. The use of rocks pre-dates the appearance of *Homo sapiens* in Africa, stone tools have been associated with the fossils of earliest man, *Homo habilis*, one and half million years ago.

Shackley traces the development of pre-historic ‘man’s’ use of rocks from crudely fashioned stone tools through to the creation of elaborate stone tool kits. The progression of these tools varied from place to place and time to time. The use of stone tools is as widespread as pre-historic humanity, on all continents except Antarctica. Some cultures continued to use stone tools into the twentieth century. According to Flood (1995, p. 223) Australian aborigines shaped porcelain insulators and discarded glass pieces into spear points and adzes using the same techniques as stone tool making.

Shackley tells of ancient factories and trade routes developed especially for stone tools. Stone axes were one of the major items traded, and this trade continued into the Bronze age and the Iron age. Some of the axes, being intricately carved and polished, indicated use beyond the mundane and probably had a ceremonial role.

Rocks containing copper and iron helped some societies to develop metallurgical skills, progressing, if that is the word, from the Neolithic age to the Bronze and Iron Age.

On the whole Shackley covers the pre-historic European scene, with some evidence of use of stone implements in Egypt, China and Central America to demonstrate the universality of human’s exploitation of rocks.

In an account of building with rock Shackley tells of a number of piles of stones associated with early man found at Olduvai Gorge, which archaeologists postulated to be wind breaks. She proceeds to develop her story describing how the Egyptians, Greeks, Romans and Britons quarried rock, including sandstone and marble, to produce building material. She covers the building of the pyramids and Stonehenge, and puts forward evidence of the skills these ancient societies possessed in cutting with accuracy, dressing and transporting these rocks.
Amongst the other uses made of rock Shackley relates how rocks and minerals were used as cosmetics, ornaments and jewellery. Red ochre, malachite, antinomy and galena were used to decorate the human face and body. Although the earliest jewellery found was made of shells and amber, later fossils and stone beads were also used. Further developments led to carved gems such as the Egyptian scarabs and the use of gems as seals set in signet rings. The ancient Greeks and Romans valued rock crystal utensils and paid high prices for them. These ancient peoples crushed rocks and reconstituted them to make bricks, cement, glazes for pottery and glass. Different minerals used produce glazes and glass of different colours.

The Egyptians and Romans crushed rocks and minerals, mixed them with fat, oil or water and administered them to patients. The Chinese added crushed fossils to their armory of medicine. In the ancient world, as today, minerals were used for culinary purposes, and alum and rock salt was used in mummification and processes such as leather production and dyes.

Shackley makes clear that apart from the use of rocks in the technological and cosmetic spheres, rocks played a part in rituals and spiritual life, and were used to create 'ritual buildings' and for magical purposes.

Although Shackley's material does not tell us why modern non-indigenous Australians collect rocks, her broad, though detailed, exploration of how 'man' exploits rocks gives us a deep understanding of the inter-relationship. The relationship is primordial, we come from rock, we are imbedded in rock and we use rock to create our material culture. That we collect rocks should, perhaps, come as no surprise, but with no practical and ritual use, why do people do it?

If Shackley's Rocks and Man has any failing it is that it is very Eurocentric, and the base she creates needs to be expanded by delving into material closer to home, Australia.

Josephine Flood's Archaeology of the Dreamtime (1995) gives an insight into the use of rocks in Australia's pre-history. In western Arnhem Land excavated stone artifacts and the strata in which they were found have been dated to 'between 55,000 and 60,000 years'
old, the oldest known site in Australia (Flood, 1995, p. 92). The stone artifacts found in Australia range from cutting tools such as flakes, adzes, scrapers, and stone cores, to spear points and grind stones. Flood points to the progression of stone tools from heavy, hand held general tools to lighter, more specialized varieties, including composite tools such as axes and spears with wooden and other components. The tools in Australia vary, as Shackley previously informed us, according to their age and place. These variations are important to the archaeologist as they ‘can be used as cultural markers’ (Flood, 1995, p. 16). The context in which the tools and other artifacts are found also informed archaeologists as to how Australia’s Aboriginal people lived and successfully adapted to their environment.

Included in Flood’s book is a section on rock art, both petroglyphs (that is engraved, carved or tapped into the rock) and rock painting. The oldest dated petroglyphs go back to some 40,000 years and rock paintings have been dated as between 24,000 and 29,000 years old. Some of these sites have been worked continuously over long periods of time and are associated with other artifacts. The art produced ranges from geometric motifs to recognizable animals, both extinct and extant, spiritual beings, human figures in a variety of situations, and stenciled handprints.

Rock art is found on rock outcrops many of which are part of indigenous Australia’s mythology and spiritual life, both past and present. Australian Dreaming: 40,000 Years of Aboriginal History (ed. Isaacs, 1980) and Aboriginal Myths, Legends and Fables (ed. Reed, 1982) relate many stories where the protagonists, both animal and human, become transformed into stone. The stories are very specific as to the events and the location of the transformation, and some of these sites are recognized and protected as sacred sites.

In episode seven of Landscape and You: Visual Artist in the Field Anne Walsh, an aboriginal informant, tells the story of a Malu, a kangaroo, who was speared by members of a nearby tribe and fled across the landscape splattering blood across the land until coming to rest at Wilgi Mia north east of Cue in the Weld Ranges. The ‘scattered blood’ is the mythological origin of the red ochre found in that region. Wilgi Mia is one of the oldest known mines in Australia.
and the red ochre mined there was traded among the Aboriginal people and has been identified as far away as north west Queensland.

The red ochre from Wilgi Mia, and in other places, yellow and white ochre, is used for body and face paint and in rock and bark painting. Its use is both ceremonial and ornamental, and traces have been found in grindstones where it was pulverized at a number of archaeological sites. When we, the crew, invited Anne Walsh to visit Wilgi Mia with us she declined telling us that it's a man's site.

The crew, after videoing the ancient mine, could not help themselves and collected red ochre rock and powder in any container they had available. Here was a remote site with a history and a story and despite the lack of a spiritual or cultural connection to it or uses for it, the crew were drawn to add the ochre to their rock collection. In the mine the crew found a grind stone in situ. The crew left it alone in awe that it was there and could still be in use.

This was not the first time the crew was confronted with artifacts of Australia indigenous inhabitants. Earlier during the shoot Anne Walsh's husband Frank presented a sequence for the program on tracking and bush tucker at Twenty Four-Mile Mill. Under trees whose seeds were ground to produce flour, we had seen similar grind stones. Frank led us to a cave where we saw and videoed a number of stenciled handprints. Near the cave members of the crew found flakes that appeared to them as if they had been manufactured cutting tools. The crew asked Frank if they were stone tools and if it was all right to take them. Frank said they were and, either because he did not wish to disappoint the crew or because he knew that the area had many such artifacts, quietly acquiesced. The happiest collector of rocks on that day was Frank who found a sizeable quartz crystal. The crew was impressed.

After that day the crew would look at likely rocks to see if it was or was not a stone tool or part of a stone tool. Despite being warned by the station owners that such items should be left in place, I suspect that some made the journey back to the city.

In Archaeology Of The Dreaming Flood describes how she discovered her first site, Cloggs Cave, Buchan, Victoria, and how the site was carefully excavated so that the various layers and the
artifacts, among them stone tools, could be dated. Here the archaeologist could be seen as a specialized rock collector. The crew had become, in their own way, without training or a historical context from which to work with, amateur archaeologists.

But this did not explain all collecting the crew had engaged in.

**Mineralogical Societies**

A search of the Internet revealed a site of another group with an interest in collecting rocks, The Australian Mineral Collector. The site, with a newsletter and a picture gallery, is associated with mineralogical societies in the various capital cities. The newsletter raises questions such as 'what make a good specimen?' and suggests 'trimming' as a way of improving the aesthetic qualities of the specimen in question. The newsletter also reviewed the diary of an early Queensland surveyor and told of an upcoming conference. The Mineral Gallery displayed photographs of specimens with text outlining the geological processes that formed the specimen, their chemical composition and where they were found. Despite the air of scientific objectivity found in the text the specimens were described as 'beautiful', 'high quality', 'rare' and 'diamond like'. Some of the specimens were collected from mines deep underground. These were the treasures of serious collectors who had traveled far and wide on field trips to collect their rocks.

Similar sites were found in Australia and North America: The Australian Fossickers Club, The Furneaux Lapidary Club and The Californian Federation of Mineralogical Societies to name a few. Most of these sites carried mission statements to promote their activities. For example the North Orange County Gem and Mineral Society site stated:

"members enjoy a wide range of diversities such as rockhounding - jewelry making, (which includes silversmithing, wire wrapping and other metal design) - stone cutting/polishing, (such as cabbing, faceting, flat lapping and stone tumbling) and many other geology related interests We also enjoy sharing our adventure stories with each other about that five hundred pound agate boulder that was too big to haul out, and promise half to whomever will
help get that darned thing in the truck.”
(http://home.inreach.com/o-nogms/, 2000).


Not one of the crew belonged to a club or society dedicated to the collecting, cutting and polishing of rocks; let alone jewelry making. Frank Walsh’s find of a well formed quartz crystal stirred their interest and some effort was spent trying to locate a similar rock, but it was not to be. A rock with a glint of opalescence, so the finder claimed, also caused a flurry of activity and discussion as to what had been found. The crew members were neither amateur geologists, relying on high school science lessons, nor lapidarists, yet their collecting activities persisted over a number of trips to Meeline Station.

Rocks as commodities

Perth weekend markets often have stalls peddling rocks gathered from around the world. Some rocks are presented as scientific curios, fossils and mineral crystals. Others are artifacts of the so-called ‘New Age’, quartz crystals to focus one’s powers, moon stones, dream stones, dragons’ teeth and birth stones, echoing Shackley’s description of rocks used for magic. There are rocks, cut and polished, semi-precious stones that can be used as ornaments and jewellery. Here, away from rocky places such as Meeline, rocks are commodities to be bought and sold.

To the best of my knowledge no one from the Landscape and You crew sold the rocks they collected. Perhaps the answer to my question lay not with the rocks but with the activity of collecting.
The Collector

Baudrillard’s 1968 essay *The System of Collecting* found in Elsner and Cardinal’s *The Culture of Collecting* (1994) provides an interesting starting point in this area. In Baudrillard’s theoretical framework the collector has a passion for the objects collected; the meaning of the object collected belongs to the collector. Thus the collected object loses its function and becomes a possession, a ‘lovely piece’ (1994, p. 8). Baudrillard’s words echo descriptions used by the mineral collectors - ‘a lovely specimen’. Further, Baudrillard tells us that one is never enough, ‘invariably there will be a whole succession of objects’ (1994, p. 8).

Baudrillard describes two periods in life when people, particularly men, collect. Firstly, he states, children between the ages of seven to twelve collect in an attempt to control the world beyond them. After puberty collecting activity tends to disappear only to re-emerge in men over forty, for whom collecting is ‘a regression to the anal stage’ (Baudrillard, 1994, p. 9). Collecting is related to control over the object.

Could it be a kind of fanaticism, a passion that drives the collector? The object, according to Baudrillard, becomes the beloved object and pleasure comes from the possession. Baudrillard underlines the subliminal sexual nature of collecting with terms like ‘intimate delirium’, ‘fondle’ and ‘a strong whiff of the harem’.

Baudrillard describes the collected object, without irony, as the perfect pet. (The fad of the pet rock was to come later.) The collected object never threatens the owner, provides the possessor with company and a focus upon which to meditate.

Collecting is, within Baudrillard’s system, a ‘narcissistic projection’ (1994, p.12) where the collection is a reflection of self and if possession of one object gratifies, many objects multiply the gratification. Collectors collect in series or sets. Their activities are aimed at completing the collection, and they behave in strange ways to acquire a unique or rare object.

Baudrillard claims that “the passion for objects climaxes in pure jealousy....What comes into play is a powerfully anal-sadistic
impulse” (1994, p. 18). The object collected becomes an extension of ones self and an obstacle to communication with others.

Baudrillard’s Freudian analysis of the collector is harsh, abstract and generalized. The collectors in his examples, apart from pre-pubescent children, are all male and the objects they collect all man-made, yet he applies his analysis to all collectors. For him, collecting is a solitary and alienating activity, a fetish for which he appears to have no compassion.

In my experience, collectors can be of either gender, aged from seven years and over, and that objects from the natural world, like shells, eggs and flowers, are collected with the same vigour as man-made objects. Though collecting has a compulsive and solitary aspect, evidence from mineral collectors’ WWW sites indicates that collecting is also a social activity entailing field trips, exhibitions and conferences.

At Meeline, members of the crew used their free time to return to sites that they personally found interesting to collect particular rocks. Given that they worked six days a week in the field and could have spent this time resting, this behaviour could be seen as compulsive and solitary. Individual crew members could have desired time to themselves and an opportunity to interact with nature. The constancy with which they collected both during work and free time points to some degree of compulsion in the activity.

Episode four of Landscape and You: The Dryandra Camp (1996) documents the activities of student artists on an art camp in Western Australia’s south west. The artists collected bark, leaves, fungi, red ochre, sands and rocks to incorporate into their works. At times the collecting activity was frenetic and had a manic quality about it. The creation of art works on the camp using these materials was equally passionate. The artists collected the natural materials to create objects that they hoped others would purchase and collect.

Unlike Baudrillard, Pearce in Interpreting Objects and Collections (1994) views collecting as part of culture and states “our relationship to the accumulation of objects is as profound and as significant as our relationship to each other, to language, and to time and space, and as complex” (1994, p. 4). Pearce points out that even natural objects, such as stones, fall into the framework of material culture.
Language and analytical thought is used to “distinguish and classify them” (Pearce, 1994, p. 19). So rocks, once collected, become social constructs as much as postcards, stamps and works of art. In the process of being selected and collected the natural object, the rock, acquires meaning and becomes part of human culture.

Pearce puts forward as an example the moon rock exhibited at the National Air and Space Museum, Washington, D.C. This object was treated with reverence and “displayed in an alter-like structure” (Pearce, 1994, p. 10). The moon rock had become part of human culture. It had acquired value and meaning beyond scientific and geological meaning. To the scientist it provides clues to the formation and make up of the moon, to the science fiction reader or visionary the rock is part of the ‘big step for all mankind’ and to the nationalist it could be seen as statement of the power of the U.S.A. Meaning and the value given to the object can be both personal and communal.

At a particular site at Meeline small black rocks with glassy appearance were common. Could these black rocks be tektites or meteorites? The crew became excited at the prospect of collecting extra-terrestrial rocks. After shooting what was necessary they spent some time selecting and collecting likely candidates for their rock collection. Whether or not these rocks had extra-terrestrial origins did not matter so much as the meaning which the crew themselves attributed to the rocks.

**Meaning**

Hodder, in an excerpt from The Contextual analysis of Symbolic Meaning (ed. Pearce, 1994, p. 12), argues for three positions in ascribing meaning to an object. First, the function of the object, how it is used, gives meaning to the object, for example, an axe, a chain saw. Second, the meaning of the object can be found within a code, for example, rocks can be classified according to their origin: igneous, sedimentary or metamorphic. This coding is arbitrary; the rocks could have been organized according to their constituent minerals or their hardness. Third, historical context contributes to the meaning of an object. Meaning arises from changing perspectives
and associations, which the object accumulates over time and is symbolic.

Pearce (1994) furthers this approach using semiotic theory to explain how an object acquires meaning. Using Saussure’s framework she posits that in any society there is a set of rules and categories that are broadly shared, the langue. Referring to Barthes, she identifies the langue as the signified. Out of the langue comes social action, the activity and material reproduction of the society itself, the parole, identified as the signifier. Through the langue and the parole the object acquires meaning. The langue and parole are not static but change through time as society changes. Meaning can also change over time, through its historical context. The meaning of an object can be intrinsic in that it is directly related to the object’s social use - the object is seen as sign. Or meaning can be viewed as symbolic when it is not directly connected but is joined metaphorically (Pearce, 1994, p 23). In describing an object acting as a sign Pearce states that the object can stand in for the whole, it can be seen as metonymic.

This model of looking at collected objects is a powerful tool for analyzing man-made objects, but how can it be applied to the collection of natural material? Pomian (ed. Pearce, 1994) describes how the collected object can provide a connection between the visible and the invisible world - the spiritual or imagined world. He gives as an example the gemstones collected in the ancient Roman world as “they encapsulated the whole of nature” (p. 171).

The rocks collected by the Landscape and You crew were part of the landscape of the Murchison, but did they encapsulate for the crew the Landscape and You experience? Perhaps it is time to look at the literature on landscape and see what answers it could provide in understanding why people collect rocks.

**Landscape as text**

In Western philosophy from the sixteenth century on a dichotomy exists between nature and civilization. Nature is seen simultaneously as pure, untainted by man, and threatening - beyond human control. Civilization, on the other hand, is a human construct - created and controlled by ‘man’. In many indigenous societies this divide does
not exist, nature and their particular civilization or culture are inseparable. Nature, providing water, food and shelter, looks after them and they, through laws and rituals, look after nature.

In the last forty years writers and researchers, artists and activists, from Rachel Carson through to Ben McKibben and Bob Brown have pointed to the on-going and permanent damage we, western industrialized civilization, have inflicted on the planet Earth. In part, this damage has been due to our belief that nature is boundless and resilient. This is one of the consequences of the nature versus civilization divide. In recognition of the fact that we need a greater understanding of the natural world and our place within it a number of disciplines have arisen – landscape studies is one of these.

Alex Wilson in The Culture of Nature: North American Landscape from Disney to Exxon Valdez (1994) defines landscape as:

“a way of seeing the world and imagining our relationship to nature. It is something we think, do and make as a social collective.”(p. 14).

Wilson argues that landscape is a human construct, and that it is created and defined by our relations with the land. Wilson attacks the notion of untouched wilderness in developed countries like United States, pointing out that much of what is seen from a car window in these areas is landscaped to give that impression. He calls our activity of shaping and manipulating the land ‘landscaping’.

This shaping of the land, altering its morphology or ecology, to suit our purposes is not only the prerogative of western industrial societies. Ancient Mesopotamians, Chinese and pre-settlement Australian Aborigines all altered the land to achieve desired outcomes.

In an era of environmental crisis it could be argued that nature is becoming a commodity, preserved in theme parks, national parks and reserves which maintain the division between nature and culture. In Australia this commodification of nature can be seen in the brochures and posters of tourist agencies, airlines and backpacker hostels. National Parks created for the purpose of preserving natural resources remain available for both logging and mining. Driving through the Murchison, accessing remote places, the illusion of an
untainted wilderness—nature—holds strong. This is despite the knowledge that foxes, cats, rabbits and goats— the unwanted and undesirable— as well as sheep and cattle have had a devastating effect on the fauna and flora of the area.

The converse is the creation of native plant and rock gardens in suburbia for reasons of water conservation and national identity, bringing the wilderness back home.

Schama for different reasons also pursues the theme of nature and culture in Landscape and Memories (1995). He sees landscape as the product of the human mind ‘built up as much from the strata of memory as from layers of rock’ (Schama, 1995, p. 7). He describes how after the creation of the first America National Park Yosemite Valley by an act of Congress both mining companies and the indigenous inhabitants were removed to create a landscape ‘with no trace of human presence’ (p. 7).

Schama explores the history of landscape and its place in culture. The term ‘landscape’ entered the English language in the sixteenth century from the Dutch word landschap derived from the German word landschaft which ‘signified a unit of human occupation’ (1995, p. 10). Its depiction in the visual arts whether in England, Holland or Italy strived for the Arcadian idyll, a balance of human activity and nature tamed.

Though Schama does not deny the damage done to the natural world, he does not dwell on its negative aspects. With Landscape and Memory he hopes to show the richness of landscape tradition, its role in memory and myth, “to show just how much we stand to lose” (1995, p. 14).

Schama demonstrates the place landscape holds in cultures. His examples range from forests, dwelling places of gods, nymphs and untamed beasts, hunting grounds of kings and sites of sacrifice and dark deeds; water, purifying and life giving, sacred, mysterious and deep, site of settlement and trade; and rock, the holy mount, climbing great heights, majestic, home to immortals and dragons, a place of solitude and prayer. It is at these sites that gods die and are reborn, history is made and children play. The landscape is a dense text,
over-laid with myths, histories and memories. It is a source of mystery and transcendental experience.

According to Schama the landscape tradition is also closely tied to national identity. The landscapes of France, England and the United States all play a role in the iconography of these nations (1995, p.17). Unfortunately for Australian readers most of Schama’s examples come mainly from North America, Europe, Egypt and Asia. Roslynn Haynes’ Seeking the Centre: The Australian Desert in Literature, Art and Film (1998) re-dresses this absence. In Australia the landscape too is a place of myth and memory. For the indigenous inhabitants the connection with sites was spiritual and eternal, ancestral beings created and became the land. Law and ritual reinforced their ongoing relationship with the land (Haynes 1998 p.11-22).

To the early European settlers the land beyond the coast and fertile river plains was a place of speculation and hostility. Haynes presents excerpts of explorer’s diaries in which they record that they searched for an inland sea, new land for settlers, convenient trade routes, gold and fame. Many that returned told their stories and described a dry inhospitable and impenetrable place. Those that did not return, such as Leichhardt, Burke, Wills and Lasseter, fed the myths of the interior. Eventually, though these expanses were named, settled and fenced – they were never completely conquered. For modern Australians, without reliable transport and assured water, the desert remains a dangerous place.

Over the past two hundred years the desert as a landscape, a place of myth and memory, has been revisited and re-interpreted. Visual artists, film makers and writers have reworked the old stories, reappraised the position of the Aborigines and the settlers and taken notice of Australia’s biological and geological diversity. This reworking has often enriched our understand of the landscape. For some the desert becomes a site of beauty and spiritual strength. The settlers began to see Australia as home.

Haynes states that the desert is Australia’s most potent and universal national symbol. And Uluru, “sufficiently close to the centre of Australia to symbolize its heart” (1998, p.264), is its prime icon.
Haynes compares a journey to Uluru to a pilgrimage for modern Australians, which McGrath sees it as "an important example of cultural convergence between Aborigines and white Australians" (quoted by Haynes' 1998 p.265).

In episode three of Landscape and You: Creating Significance (1996) Ross Gibson states "the act of narration is one of the key ways we understand ourselves in a place .... a space is a text for meaning". Throughout the series Aborigines, visual artists, poets, writers, station owners and others told their stories. Aboriginal informants related how topographical features got their names. The station owners told their family histories and took the crew to their favourite spots. Artists displayed their work for the camera and described the ideas and feelings the land gave them and how they worked these into their art. These stories together with those of the crew themselves made a text of the Meeline landscape and gave it meaning.

Perhaps this is a good point for a beginning to understanding why the crew at Meeline collected rocks. If the landscape, a space, is viewed as a text then the rocks could be seen as quotes that carry within them the whole story. The rock is a sign, a metonym, of the landscape, that carries meaning for the collector. But perhaps this is too simple an explanation and would not provide the complete answer.

Shackley informs us that 'man' and rocks go back a long way. From primates evolving in Africa to modern humans we have used rocks and minerals to shape our world and create our material culture. With such a long association it is possible that without thinking, innately, we reach for a rock to frighten a dog or to skip across a body of water. Along with sticks and bones, rocks formed part of our first tool kit. The arid land at Meeline with its rocky outcrops provided many opportunities for picking up rocks.

For the crew venturing into the Murchison was an exotic experience. Here is the other landscape, seemingly unchanging and eternal, silent and expansive -no concrete, no asphalt and no other cars. The experience can be profound.
On the first night a crew member wandered of into the bush to get a better view of the stars and got lost. Spending the night in the bush they made their way back in the morning, colder and wiser. You can feel perfectly safe one minute and lost the next - no lights and no signs - without knowing the place and its stories you could vanish.

Flood, Haynes and the Aboriginal informants describe the long and deep relationship Aborigines have with the land. But nothing prepares you for the feelings you experience when you stand before rock art at a site probably older than the pyramids. Everywhere the crew stopped to shoot, on a height or near water, there was evidence of Aboriginal habitation. The Aborigines would have stopped there for food and water, and now we were retracing their steps in looking for the perfect shot, metaphorically our food and water. Between set ups the crew would often converse with the informants, and on several occasions we enjoyed bush oven cooked kangaroo. The crew's sense of the country's indigenous inhabitants was heightened by these experiences. And this would explain some of the rock collecting.

Applying Saussure's semiological model for analyzing collections provides us with a tool to an understanding of what the rocks collected mean to the collector and others who may later view the collection. In Australia the white society's values, Aboriginal people's values, their pre-history and history, their relationship to white society and material culture is the langue, the signified, the set of known or accepted shared knowledge. This is historical and is in a constant state of flux. The piece of red ochre is the physical embodiment of the signified. It is the parole, the signifier, and it acts as a sign for the whole, giving the object meaning for the collector. The analysis is functional and mechanical but it does give some understanding as to what the collector gets from the object.

The collected red ochre comes to mean the story of the Marlu, rock art, ritual, trade, the Aboriginal peoples occupation of the land and their dispossession. For a piece of coloured rock it carries a lot of meaning.
I suspect the crew collected for many reasons, some obvious and some so subtle, they were not even obvious to the collectors. Maybe Baudrillard was right when he described collecting as an act of possession. The Landscape and You crew collecting rocks were in the act of possessing the landscape. And in turn the landscape with its stories possessed the crew. The rocks whose function and meaning could barely be described as part of the landscape became transformed when collected. Each individual collector would ascribe their own meaning to the rock informed by what they knew and believed. For the collector each rock collected gratified and the next rock gratified more. At times the behaviour became compulsive and obsessive.

Walter Benjamin quotes a German saying“ when someone goes on a trip, he has to tell something about it” (Benjamin, 1978 p.227). Perhaps the rock collection is the story of the journey.

Having reviewed the historical and theoretical material that could explain why the crew collected rocks, to extend my understanding I should also ask them. Their motivation, though a source of speculation and investigation for me, is best known to them. I would like them to show me the rocks they collected, to ask if they remembered picking them up, what the rocks meant to them then and what the rocks mean to them now. Next time I see them I will ask them to tell me their rock stories.

References


Meeline Vista (Landscape and You: Simon James)

Grindstone (Landscape and You)


**Notes:**
Biographies

Andrew Dunbar is an honours student in the School of Communications and Multimedia. His honour's work involves the development of an online project management system, which would aid in the scheduling and execution of projects in the multimedia domain. His interests are online project management, wireless communication for the delivery of Internet content, and authoring for the Internets.

Ken Ireland is a lecturer in multimedia, and computer science at Edith Cowan University. He joined ECU in 2001, after leaving WMC Resources Ltd, where he was Engineering Manager - Industrial Minerals.

During his 43 years working in the resources and engineering sector, Ken has had a close relation with the IT industry, starting with the installation of a remote access system to an IBM mainframe for statistical interpretation of smelter data.

Although a native "strine", Ken has spent 16 years "outside" on various projects in France, California, Quebec, South Africa, and most of the rice countries. As a consequence, he now refuses to eat croissants, BLTs, baguettes, boervoerst sausage, and rice.

Ken's love is in the dynamic mathematical modelling of industrial processes, and the extension of the modelling to process visualisation, hence his entry into the multimedia arena. He aims to develop projects between ECU and the resources and manufacturing industries to exploit the usefulness of process visualisation.

Lawry Hill was awarded a Bachelor of Commerce from the University of Western Australia in 1976 and attended the fulltime Production Workshop at AFTRS from 1977-79. After working for the Grundy Organization as an assistant to the Production Co-ordinator he returned to Western Australia to fill a variety of positions in commercial production and sales for the Golden West.
Network. In 1990 he established and ran a production company that specialised in broadcast quality corporate videos before selling out to his partner and joining the W.A. School of Art, Design and Media at Central TAFE as a full time lecturer in 1995. He is mid-way through a Master of Communications at Edith Cowan University, researching interactive television. His preferred contact email is Lawryhill@bigpond.com

**Donell Holloway** is a Master of Communications student and sessional tutor at Edith Cowan University. Her research interests range from children’s media and gender issues to Japanese cultural studies. She has spent most of the last 15 years teaching at Spearwood Alternative School and has a special interest in community schooling, environmental education and information technology and still keeps her hand in by doing the odd relief day there.

**Catherine Wangari Kaine**, was born in 1976, Nairobi, Kenya. She attended her high school studies and graduated with a Bachelor of Arts degree in English in Kenya. Catherine came to Perth, Western Australia in March 2000 for further studies at Edith Cowan University and graduated with a Graduate Diploma in Communications Public Relations in May 2001. She is currently doing a Master of Arts in Media Studies.

Having worked in the film and video industry for over twenty years, **George Karpathakis**, a graduate from both the Western Australian Institute of Technology and the Australian Film and Television School, is a latecomer to post-graduate studies. Producing and directing the television series *Landscape and You* sparked his interest in Landscape Studies and he hopes to apply his research work to future filmmaking.

**Steven McKiernan** studies Communications at Mount Lawley ECU. His research centres on surveillance, landscape, and simulation. Further research interests lie in the area of music video and advertising. He has a few close friends, who know who they are. Sometimes he plays guitar (badly). His chief interests in life are reading everything and writing occasionally, good food, wine and company, and loud music.
Jack Seddon has broad interests. He has painted houses, managed hotels during the height of the boutique breweries and conducted trials to explore concepts in sustainable farm planning methods. Multimedia became a passion while developing a CD ROM version of a book about the Snowy River of south-eastern Australia. At present, he is completing his honours year in multimedia and communications with an emphasis on instructional design and its implications in producing proficient multimedia. He also enjoys travelling, mountain climbing, squash, gardening and good conversation.

Scott Smith is an Honours student and sessional tutor in the School of Communications and Multimedia at Edith Cowan University in Perth. Broadly speaking, his research interests lie in the nexus of culture, ecology and technology. In between study commitments, Scott works with young artists and writers in the production of a youth magazine 'Quartered', of which he is editor. He is also a percussionist in a noisy, avant-garde ensemble.

Nicholas Tan spent his foundation years being educated at some of the top schools in Singapore. He received his college education and began his undergraduate studies in Toronto, Canada. Eventually succumbing to warmer climates, Nicholas graduated in 2000 with a Bachelor of Science majoring in Interactive Multimedia Technologies from Edith Cowan University in Perth, Western Australia, where he is currently pursuing his honours degree. Nicholas was first wired in 1993 with his 386SX and 2400bps modem, which he still keeps for memories. He has since devoted a greater part of his life in relentless pursuit of knowledge in the areas of Internet technologies for higher education and Web development. Occasionally, he still keeps an eye out on the happenings of the Internet underground.
Sonya Sears

Sonya graduated from Edith Cowan University in 1991 with a Bachelor of Arts in Media Studies and Photography and undertook further studies in Photomedia in 1994/95. She has actively photographed and exhibited from 1987. 1994 saw her first solo exhibition, *The Containment Series - Journey Against Time*. Work from this series was later exhibited in group exhibitions at the Museum of Modern Art Heide (1998) and the Mead Gallery, University of Warwick, UK (1996). Documentary photography has been one of her main interests. The 1997 Documentation of Site, commissioned by the Subiaco Redevelopment Authority, is an important historical document of the industrial landscape prior development of Subi Centro housing division. Sonya has been involved in several local photographic groups over the years and has recently served two years on the committee of the Photography Gallery of WA. With a qualification in horticulture her more recent work has involved picturing 'nature' as an adjunct to her interest in the nature/culture dichotomy at work in our environment.

G'day thrill seekers!

My name is  
ZOË JANINA YÖKKI JOY TROTMAN.  
I was born at  
KING EDWARD HOSPITAL (in Perth)  
6 / 10 / 1980

I AM currently undergoing my  
21ST REVOLUTION AROUND THE SUN

The wisdom with which I leave you is this:

I pink, therefore I spam!
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Kate (but if you were off it, I'd love you anyway)

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