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Fine Art (Painting)

THE ELECTRIC APE
Images of a Post-human Existence

by

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INTRODUCTION,
TECHNOLOGY, THE NEWEST TESTAMENT.

It all moves so quickly now...
These days it all changes...
Nothing stable, nothing static.
Nothing to stand on or to cling to...
No maps for these territories,
though they are of our own creation...
No myths for these countries of the mind...

Accelerating constantly,
toward some null point of post-humanity
(from "The Memory Palace" by William Gibson).

In the opening sequence of Stanley Kubrick's '2001, A Space Odyssey' there is a stark, subversive intimation that man is only as developed as his technological appendages, that is the basis for this thesis. Firstly we are introduced to the twilight world of the apemen as they are inspired to seize their destiny by utilizing the tool / weapon to up-grade themselves. Then as the triumphant ape hurls his prize into the air, a great moment of human potentiality, we jump to a spiralling spacecraft, a society in the stars, sealed in a hermetic, orbiting environment. Though the distant relatives are both isolated in the midst of infinity, the astronauts have forgotten the fear of darkness and of what lies beyond. Technology has superseded the astronauts, it has become more sophisticated than humans, who are flaccid in comparison with the apeman standing taut and erect, in full control. The next moment of human potentiality comes at the end of the film, with the birth of the extra-uterine star child, the symbiosis of man and technology.

Through acceptance of technology into our evolutionary progression we have increased the body's capacities and extended ourselves in space and time. This thesis is concerned with the transparent sophistication that technology has reached, the borders we are transgressing, the anxieties of the new global community in this accelerated age and the distancing of reality through technology. The development of the post-organic human can be traced in many genetic and mechanistic directions: into the liminal space of virtual reality or the hybridization of man and cybernetic device. Each enquiry culminates in the immateriality of the body as we know and

experience it. The virtual or cybernetic body can be seen as a surrogate for our obsolete system. It is time to question whether a "bipedal, breathing body with binocular vision and a 1400 cc brain" (Stelarc, 1995, p.91) is an adequate biological form. The body is neither a very efficient nor a very durable structure, which malfunctions often and fatigues quickly. Its performance is determined by its (limited) age and it cannot adjust well to harsh environments. Post-human strategies are being mapped unto the history of the twenty first century to modify and mutate the body and its environment. Theological issues concerning transcendence and immortality are readdressed in the light of sophisticated simulations of reality. The elaboration of our culture makes the question ' what it means to be human' more urgent.

A NEW ANTHROPOLOGY

The context of this confrontation is somewhat problematic. Are these moves away from organic functions to technological strategies a desire to disengage the body from a depleted ecology? Present anthropological standards view humans as separate entities from their surroundings and ascribe an instrumental or use value to the non-human world, which is preserved for our benefit. Opposed to this anthropocentric view is “Deep Ecology,” a holistic or Gestalt set of beliefs, placing humans in the biospherical net with an intrinsic relationship to nature. This dissolves the notion that the world is composed of insoluble objects that can be reduced to commodities. The constant flux of the relationship is simply part of the dynamic process of evolution. Novelty and instability characterise this century's progression, an accelerated course through the machine age, the nuclear age, the space age and now the information age. Technology has become inescapably entangled in human development; the future can be seen as an organismic rather than a mechanistic phenomenon, a pan-psychic progression interconnecting ethics and metaphysics, evolving nature, man and technology into a unified whole. Philosophy has moved from the Ptolemaic universe to a paradigm shift - a reassessment of reality when confronted with more potent evolutionary possibilities.

The early capitalist ethos defined the human in relation to an animal world that inspired fascination and revulsion. The human

animal was similar but different than all other animals. Now we have the human defined in terms of a machine world that evokes a different set of ambivalences, but retains the 'otherness' of nature. Human identity remains at stake, subject to change, vulnerable to challenge and modification, subject to cybernetic systems that displace any antecedent reality, any aura, any reference to history.

The post-modern desire to interface with information could be compared to Goethe's desire to immerse himself in undifferentiated nature, although his ocean has become a contemporary sea of data. Filtered through the information matrix all reality becomes patterns of abstract knowledge, illuminated in virtual space. "The dream of perfect FORMS becomes the dream of inFORMation." (Heim,1993, p. 89)

PRESENT TENSE, FUTURE PERFECT.

There are three historical revolutions which have stripped away man's ego and brought us to a point where we look in retrospect with a sort of long term collective memory at our previous incarnations, achievements and follies before fashioning a new self and glimpsing the possibilities of the next millennium. Copernicus displaced man from the centre of the universe, Darwin relegated man to the animal kingdom and Freud contributed the notion that man was not even in control of his body, but subject to his subconscious. The advent of cybernetic technology strips away the ultimate layer of humanity, contrasting our essence, our brain power that represents our potential divinity against the prostheses, the information entities and the virtual backdrops that make up the main areas of discourse of this thesis. Cybernetics is derived from the Greek Kubernetes meaning 'Steersman,' reflecting it's inherent possibilities to shift the course of humanity's development.

In the first chapter I discuss the present and our presence under the sign of technology. Baudrillard, Mc Luhan and Cyberpunk literature form the bedrock of the argument that our future is a projection of contemporary spectacle obsessed culture and leads into possible strategies for continued development. The second chapter discusses the extension of the nervous system into Virtual Reality, seeking its origins in communicative and architectural structures and tracing its development into an immersive, liminal

space. The third chapter discusses the likelihood of Artificial Intelligence out-thinking and superseding the human race completely. This strategy is a lateral development to the organism / mechanism construct, an autonomous life form that we view as an evolutionary rival and not an aide. The fourth chapter is concerned with the merging of organism and cybernetic device and the wider range of sexualities implied by the cyborg. Contemporary cinematic texts fuel the debate as to whether the cyborg is simply a fascist male in armour or a feminist ideal seeking a new identity.

Technology is an instrument of profound change, transforming reality, imputing changes on individuals, on our cultures and on society. We have surpassed the notion of technology as a quantifiable artefact. The old, industrial image of the machine does not express the immediate anxiety of technology released into public and virtual space. The Internet has proven how uncontrollable technology can be when it is within reach of the general public*1 and reinforces the censorship of print culture, the power, control and reactionism of the state. There is a history of moral dilemma and fear of obscenity wrapped up in new technologies, when the radio was invented there was a 'jazz panic,' an idea that 'jungle music' would pollute white, middle-class minds. We have been indoctrinated into the systems of techno-culture and whether we are passive or subversive within its parameters we acknowledge that technology has filtered into daily ritual (most importantly, the electric realities of television and computing) We are constantly changing our culture by upgrading our aesthetic level and the efficiency of entertainment packaging.

> "Millions of us are no longer satisfied to peer like passive infants through the Terrarium wall into the ScreenLand filled with Cyberstars like Bill and

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*1

Terms such as 'the general public' and the collective 'we' are used flexibly, taking into account the information haves and have-nots. Not only does a marginal percentage of the worlds population have access to computers, but most of the traffic on the Information Superhighway goes between four geographical locations, America , Western Europe, Australia and Japan. Just as in the industrial age one relied on physical strength in order to work, information skill regulates success in computer culture. There is nothing colloquial about the global village.

> Hillary and Boris and Saddam.... " (Leary, 1994, p. 4)

We are learning how to enter and navigate Cyberia. Our brains are learning how to exhale as well as inhale in the datasphere.

CHAPTER 1,
CYBERCULTURE AND HYPERMEDIA.

> "Man must serve his electronic technology with the same servo-mechanistic fidelity with which he served his coracle, his canoe, his typography, and all other extensions of the human organs . But there is this difference, that previous technologies were partial and fragmentary, and the electric is total and inclusive ... No further acceleration is possible this side of the light barrier. "
>
> (Marshall Mc Luhan, Understanding Media)

"We are living in the era of the blip"

(Scott Bukatman, "Terminal Identity")

In the last century, the future was simply an older, more resolved version of the present - people did not expect major, immediate changes of input from the world around them. The industrial revolution brought about enough wealth and energy to change the natural landscape, to replace it with an adapted, tempered environment. Mechanical reproduction made it possible to make copies of objects and images previously thought of as unique and irreplaceable. The politics of film-making, photography and montage were to adopt new vocabularies and ways of seeing. Walter Benjamin proposed that the shocking and paradoxical effects of having the physical world copied and reordered (through the shooting and editing of film) were cushioned by a heightened presence of mind. It was though, an appropriation of an original for a creative or abstract purpose; a version of reality was being destroyed and replaced with experiences of modernity. Just as the invention of the printing press democratized written knowledge producing rational man, in whom vision was the dominant sense, television and video technology have created a contemporary society literate in complex forms of visual communication, albeit with a decreasing attention span. Surrounded by constant spectacle; we wake up each day as if arising from a four year coma, with a huge surplus of visual information to catch up on, we can never hope to glimpse much of this 'mediascape' because its constant flow of images, sounds and narratives. We simultaneously feed the media as we

absorb it. Video surveillance is an omnipresent part of urban life; images of Gulf War bombing raids or the Rodney King beating illustrate the voyeuristic extent of the medium. Jean Baudrillard interrogates the nature of the Gulf War as an immense promotional exercise, a non-event of the global media.

> "We have seen what an ultra-modern process of electrocution is like, a process of paralysis or lobotomy of an experimental enemy away from the field of battle with no possibility of reaction." (Baudrillard, 1995, p.61)

The direct transmission by CNN of real-time information is not sufficient to authenticate a war. The war becomes a metaphor for "Virtual Reality." The events lose their identity as they attain the velocity of televisual information, which claims to provide immediate access to real events but in fact produces tainted events that replace the real. Inevitably public opinion is "informed" which affects the course of events, both real and informational.

The multiplicity of media gives the impression of freedom of choice, of cultural abundance; the truth is closer to addiction to the image:

> " The citizen has become a supplicant before the altar of the spectacle, a TV self, without any need for overt coercion. " (Bukatman, 1995, p. 39)

Passive acceptance of the ubiquitous signs, symbols and illusions of television amounts to an act of surrender.

Baudrillard's media 'hyper-reality' is expressed in hallucinatory fashion in the films of David Cronenberg, most strikingly in "Videodrome." The video guru, Brian O'Blivion's screened pronouncements echo like mantras throughout the film.

> "The television screen is the retina of the minds eye; therefore the television screen is part of the physical structure of the brain."

When experience is absorbed, edited and represented by video technology, the medium itself is palpably real. The surrender to technology is ultimately a physical acceptance. The body is invaded, the self is lost , the familiar transformed into something alien and hostile, locating a feeling of insecurity and horror within. Cronenberg

and Baudrillard both concentrate on the destabilization of the real by its own representation. Exposure means addiction.

RESISTANCE ISN'T FUTILE.

An analyst of social and political issues in the media environment, Marshall Mc Luhan seems particularly relevant since digital technology has brought the media into sharper relief. Mc Luhan believed that the era of electronic media was a "literate-mechanical interlude"(Wolf, 1995, p.182) between two great periods of culture - the pre-literate organic era and the information based electronic era. He argued that the transformation of human life is carried on by the 'Form' of a medium rather than any specific program transmitted by it. The programming of the medium is a distraction from the real content, the user, who is the true content of the media. Each medium creates a new form of human being, whose qualities are suited to it. In brief moments of mysticism Mc Luhan saw electronic civilisation as a spiritual leap forward, but concluded that electronic unification of humanity was only a facsimile of the mystical body. "Satan" he remarked, "is a very great electric engineer." (Wolf, 1995, p.182)

When information travels at electronic speeds the linear clarity of the earlier media is replaced by a feeling of 'all-at-onceness'. If everything everywhere happens simultaneously, then there is no clear order of sequence, the voices of the global media collapse into a single unified scream. The cortex that cannot cope resorts to specialisation - once a manoeuvre to methodically collect information, it is now a manifestation of information overload. Once justified as a means of comprehending the world, it now generates a conflicting and fragmentary field of disconnected and indigestible data. Mass media meant passive consumption to Mc Luhan, he described our servitude to technology as

> "...utter human docility and quiescence of meditation such as befits an organism that wears its brain outside its skull and its nerves outside its hide." (Wolf, 1995, p182)

Simulation through various media introduces the key question of how the control of information moves toward control of sensory experience, interpretation, intelligence and knowledge.

In Orwell's "1984" the authoritarian state used television to spy on citizens. In present day actuality citizens voluntarily line themselves up in front of the authority box absorbing the neurological fast food dished out in Technicolor by Newsspeak. Mc Luhan knew that the message on the screen is not important, the fact was that people are receiving signals from a screen. He knew that electronic technology would create the new global language, and to actively participate society would have to take an ideological quantum leap. Just as television sets were wrongly accepted as passive 'goggle boxes,' computers were at first misunderstood as clerical adding machines. It takes the oppositional drive of counterculture to reveal technology's evolutionary possibilities to us, to undermine stunted conceptions of reality with futurist ideologies.

THE CYBERPUNK AESTHETIC.

Cyberpunk is an eighties (ostensibly Science Fiction) genre offering a hallucinatory vision of the future as a dysfunctional brave new world; blending an underclass attitude with contemporary culture and media. It avoids the technophilia of Arthur C. Clarke or Issac Asimov, instead embracing an aporia of technology where it is appropriated into daily life in both repressive and liberatory forms. Cyberpunk fiction locates it's disquiet in the t(here) and now; like the gunslinger of the wild west or the hard-boiled private eye, the cyberpunk is an outlaw in a landscape he is forced to inhabit. With their mirrorshades and computer screen pallor they fuse high-tech neutrality with underground dissent; an unholy alliance of on-screen omnipotence and street level anarchy . Technology is no longer simply present but is invasive, penetrative dissolving the sanctity of humanism. The body is not so much deconstructed as it is customised - upgraded for efficiency. Ideologies of eighties technological innovation are present in much of this fiction. Technology that sticks to the skin, responds to the touch - the

earphone and the contact lens reincarnated into pervasive aesthetics. It is the intimate nature of the technology that creates the disquiet; the body is horrific, surrounded by objects mutating the psyche, blurring the definitions between ourselves and the 'simulacra.' In Cronenberg's 'The Fly' the scientist Seth Brundle is actually genetically spliced with the 'other' through an accident in an experimental technological process.*2

From Cronenberg's cinematic texts (where the body is a source of terror and ambiguity because its boundaries have been collapsed and remolded) to the cut-up and sampling of hip-hop there is a Faustian pact between the oppositional drive of counter-culture and the impersonal face of technological systems. Popular culture has adopted imagery of the global village and the cyborg to form the dominant aesthetic of our time, the sort of conspiratorial uncertainty present in Oliver Stone's 'Wild Palms,' for example, where perceptive individuals fight corporate illusion in order to maintain a balance between the actual and the virtual, between subversive techno-terrorists and the upper class neo-religious cult of technology.

For William Gibson, the concept of evolution over millennia boosted on an exponential curve by science is central, but is interwoven with complex social orders. We are asked how far the human can move away from itself before it becomes something else. The monarchy of the new order assumes a God-like status residing in orbit, beyond physicality and real-time.

> "She stared directly into those soft blue eyes and knew, with an instinctive mammalian certainty, that the exceedingly rich were no longer even remotely human." (Gibson, 1985, p 29.)

Gibson draws a huge sociological distinction between the technologically aware elite and the overwhelmed lower class; "sliding deeper into a half dozen synthetic lives." (Gibson, 1985, p 55.)

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*2

Brundle's invention is an instant transportation device which will supposedly revolutionise humanity in relation to distance and time. This optimism is underlined when he becomes a human / fly hybrid "Brundlefly" and revels in his new found physicality, sexual prowess and the ability to climb walls and ceilings, later though the grotesque, monstrous part of the pact becomes evident.

The world of cyberpunk is not a world were the capital F future happens, which reflects our contemporary situation, we have given up on 'The Jetsons' and moving pavements. In Cyberpunk there is a sense of dead technology, a future cluttered with junk "like a world built out of eight-track tape recorders." (Dargis, 1995, p.6) Hierarchical structures from organised religion to television networks frown on the individual thinking for oneself, preferring instead to program the 'flock'. An interactive medium such as Virtual Reality could foreseeably activate the mind and cure McLuhan's syndrome of apathetic, televisual addiction. An end to the monopoly of top-down centralized mass-media would empower individuals to communicate, perform and create electronic realities that would negate torpid futures of 'synthetic lives' from materializing. Sceptics question the nature of Virtual Reality as to whether it is really interactive liberator of television sooctiety or just another televisual medium with some interactive knobs stuck on.

Cyberpunk and the technologies that it proposes are an example of counter-culture challenging authoritarian (ab)use of technology or information. Greek philosophy and western metaphysics (the fundamentals of ordered civilisation) are rooted in binary constructions, such as good / evil, self / other, original / simulacra. Cyberpunk texts question these assumptions by transgressing dualisms in two ways.

(1) Downloading consciousness into a global information net.

(2) Internalising machinery, therefore destabilizing the homogeneity of the human form. In later chapters, these phenomena are expanded upon, from cyberpunk strategies that assert the individual in the face of (media) mediocrity, to physical manifestations of technology invading the sanctity of the body.

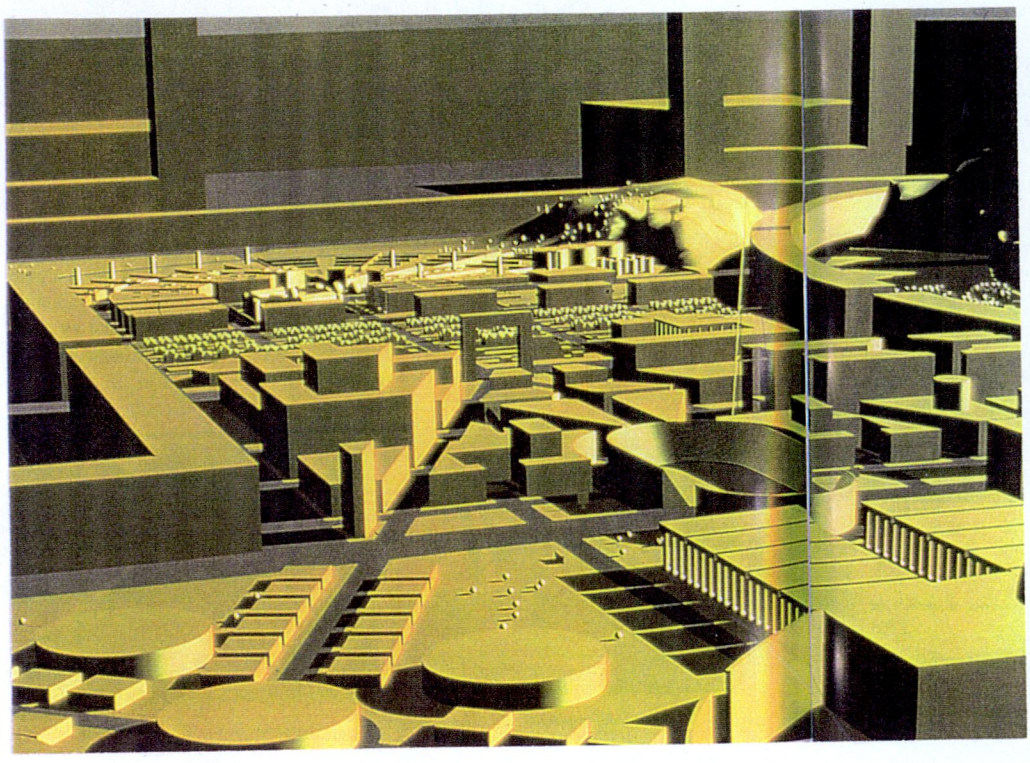

Figure 1, Matt Mullican, The Virtual City.

CHAPTER 2,
CYBERSPACE, ENGINEERING REALITY.

" Sometimes I think I've discovered a new planet, but one I'm inventing instead of discovering."
(Dr. Angelo, "The Lawnmower Man")

"We are mutating into another species - from Aquaria to the Terrarium, and now we're moving into Cyberia. We are creatures crawling to the center of the cybernetic world. But Cybernetics are the stuff of which the world is made. Matter is simply frozen information...."
(Timothy Leary, Chaos and Cyberculture)

In this chapter I would like to discuss the extension of the human consciousness into Cyberspace, an immersive medium descended from those that concerned Baudrillard and McLuhan. When describing the genesis of his cyberspatial fictions, William Gibson refers to the body language of interface with an arcade game or personal computer, namely the manipulation of computer-simulated situations by reaction. The brain sends a message to the arm, the arm to the controls, the controls to the screen and the screen back to the brain, a closed loop.

The term "virtual" is at the roots of modern science; defining the refracted or reflected image of an object. It's original use as the adjectival form of virtue (meaning to have the power of God) is echoed in the claims of virtual realists and cyberpunks alike, that we will soon be able to navigate the 'non-space' of digital terrain. Looming somewhere between actual and fictional, Virtual Reality may be a means of deconstructing what we call 'the real world' and representing it as a cyberspace created and sustained by global computer and communication networks.

Virtual Reality is the product of many scientific parents, surrounded by a romantic New Age attitude of expectancy. Its founding fathers such as Ivan Sutherland and Laron Janier are honoured as pioneers. Sutherland was the inventor of the "Ultimate Display," a space in which a computer controlled the existence of matter. Situated in the days of heavy, crude computers, his anticipation is perhaps more important than his invention. The purpose or effect of new technology is not always implicit in its

origins. The initial application of Virtual Reality was a military one, to interface pilots with complex jet equipment. In 1985 NASA demonstrated a Virtual cockpit with mock tactical scenarios to the first non-military visitors, the first public appearance of Sutherland's Display. But his output goes beyond any form of simulation that technology allows at present. His Display is a phenomenon of the future because the objects in the computer generated space are not just audible or visible but tangible, reminiscent of the structure of Aldous Huxley's concept of 'The Feelies' a sensual media format that reproduces physical senses in tandem with a projected image.*3 Mass and shape are reproduced, the act of pushing an object is achieved by relating the required effort to the proportionate weight of the object. The thorough reproduction of real physical properties is the true goal for virtual modes of existence; once these properties are introduced the task of 'Imagineering' can begin. By this I mean mythologies standards will lose their significance, their will be no up or down, day or night, no opposite sex, reality marginally improved or changed utterly. Several contemporary artists have challenged the dynamics of cyberspace, directly comparing it with the common (real) world. Matt Mullican's digital images of virtual cities sum up the complexity of urban life, simultaneously inviting habitation while alienating us until the technology exists to pierce the membrane. Conventionally we are only able to peer at the surface of the artwork or wander outside it's parameters, Virtual Reality allows the 'viewer' to participate, to break and enter through the window that the painting or screen represents. Once inside, the person who was restrained as a viewer becomes an '(inter-)actor' delving deeper through more virtual windows and participating in the creation of individual 'artworlds.'

'Interface' with the medium offers us complete simulation of the full ensemble of sense data that makes up a real experience. Stereoscopic images are projected onto each eye via a headset and

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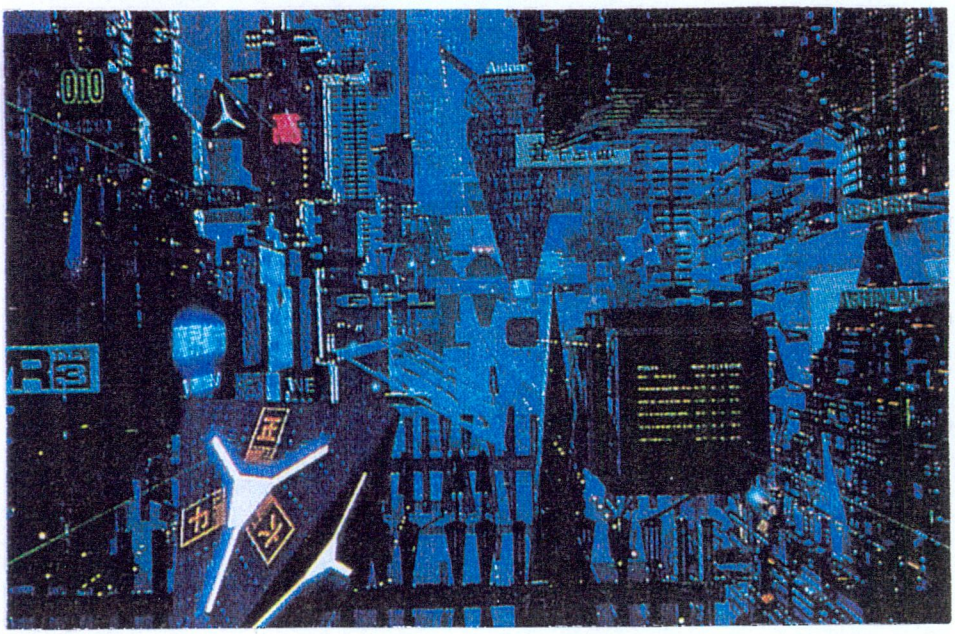
It is worth noting that the narratives of 'The Feelies" were a very basic variation on two fundamentals, sex and action. They were derived from the American 'Talkies' that Huxley saw as a base form of mass entertainment.



Figures 2,3 and 4, 'Johnny Mnemonic,' Innerspace and Cyberspace.

fused by the retinal system, to give a realistic perception of depth; motion sensors over the body effectively recreate movement in relation to the virtual environment. At the moment the cumbersome image-rendering equipment precludes getting much further into levels of realism and interaction, but increased miniaturisation will mean better mobility and stimulus for the senses. I experienced a Virtual Reality scenario for the first time at a showcase for VR technology at the Museum of Contemporary Art in Rome. The program consisted of a street scene leading towards a triangular icon, when reached the icon became a set of simple geometric shapes representing a hang-glider, the user navigated around a selection of terrains, occasionally intersecting the paths of various computer generated entities. I was struck by several factors, firstly the low resolution of the images and sounds (I was not convinced that the blocky, garish buildings or the close and far-away noises were remotely real.) Secondly, I was impressed by the fluidity of movement, if my hand crossed my field of vision its dynamics seemed perfect, apart from a slight time lag between the users movement in reality and the cybernaut's. There are glitches which will have to be erased, but more importantly the technical foundations are down for an interactive system of the magnitude of Gibson's information matrix or Sutherland's Ultimate Display.

KNOWLEDGE BECOMES FORM.

'Virtualisation' is the reverse of expressing an emotion or a thought in words or in a drawing, making the internal and private public. By internalising knowledge through media we virtualise our environment, when knowledge becomes forms in a virtual space an entirely new 'interface' is born. Cyberspace is a phenomenon capturing our fascination with the possibility of controlling all human knowledge, girding it in precise, geometrical structures and as such is a tool for examining our concept of reality. When the cybernaut leaves the confines of the body and emerges in a world of digital sensation a visceral drive is fulfilled; the realisation of the 'mind's eye' (the vision of real things in the realm of active thought) beyond the passive acceptance of sensory stimuli. The structures of cyberspace proceed from the constructs of Platonic imagination. The realm of pure information will redeem the physical world from

inefficiencies and pollution (chemical and informational). Like Shangri-la, like mathematics, the mental geography of cyberspace exists as a collective memory, the territory of mythic symbol and code, traversable by all initiated into its rituals. The graphic concept of knowledge is discussed by two children in Neal Stephenson's 'The Diamond Age:

> "What are letters?"
> "Kinda like Mediaglyphs except they're all black, and they're tiny, they're old and boring and really hard to read." (Stephenson, 1995, p.40)

Stephenson's "Mediaglyphs" are previously abstract concepts given breadth, knowledge and data taking on complex architectural forms. The nature of this (multi)medium is a threat to the primacy of the word. Virtual Reality represents the evolution of communication and logic, succeeding ideograms, hieroglyphics, the written word, the printed word and the electronic or processed word. Knowledge transmission will not simply be intensified, it will be encapsulated into a symbiotic human / information condition; monotone, static processes giving way to immersive, illustrative experiences.

> "The tablet, become a page, become a screen, become a world, a virtual world."(Benedikt, 1994, p.12)

The word has a central authority in communication, our notions of rationality and valid argument are all bound up with modes of thought derived from writing. If technology endangered the primacy of expression through words, it would be, in conservative terms a regressive step. Conservative terms though, do not allow for the complexity of the cyberspatial experience. Like the computer which was simply viewed initially as a clerical aide, virtual technology could easily be misinterpreted as an appendage to conventional communication . A technology that suddenly opens up an infinity of space, where you can have a second self would probably defy outdated modes of description anyway, being perfect and prosaic as to define itself.

For Gibson the information matrix is a neon city of corporate logistics, educational facilities and multi-layered sites of

information, each with its own formulae and codes to describe its properties, relations and means of access.

> "A consensual hallucination experienced daily by billions of legitimate users, in every nation...a graphic representation of data abstracted from the banks of every computer in the human system,. Unthinkable complexity. Lines of light ranged in the non-space of the mind, clusters and constellations of data, like city lights receding..." (Gibson, 1984, p. 51)

The 'consensual' of Gibson's vision denotes a sharing of the cyber-hallucination, exchanging data, perhaps data that represent themselves. The make-up of cyberspace itself is data which can also be accessed and exchanged, like the cybernaut "Case" in Neuromancer who engages and enters the Distributed Artificial Intelligence called "Wintermute." Agents may be part of the informational space and hence become objects of change. The delusional or hallucinational property of the definition is the transformation of the digital into the virtually real, the abstraction of information so that humans can experience the space and objects as they would the everyday world. Humans may 'be' in cyberspace as they are in space. The term 'Cloud Barrier' describes the resolution that VR systems need to accurately display moving clouds (a symbol of the natural world that VR technicians reckon stimulate the human mind.) Until simulation technology passes the cloud barrier, it will not be engaging the nervous system to the same level that the real world does. Gibson describes the technology that initiates the hallucination as either a 'Cyberdeck' an advanced computer console or a computer actually wetwired into the skull, as in 'Johnny Mnemonic' scripted by Gibson and directed by the artist Robert Longo, where the 'Johnny' of the title downloads his childhood memories in favour of corporate data which he transports through the technology in his head.

MYTHIC ORIGINS.

There are particular threads of human evolution out of which cyberspace arises . Firstly that of the social construct, a commonness of mind or the co-ordinated behaviour of a group around a set of beliefs. Consensus precedes internal critique, which coalesces into

a cultural archetype such as narratives, characters and laws. Myths both reflect the human condition and create it; the youth of each generation are thrust into a complex and rule-bound society and reach to a 'collective unconscious' for guidance. These "media" are objectified versions of the invisible dynamics of life.

The second thread is the use of media to conquer time and generational gaps, the reification of meaning. Man co-opts his environment to preserve and deliver messages to his contemporaries and his descendants. Blank surfaces, stone, bark or paper are saturated with information. Elaborate mediums are conventionalised into hieroglyphs and alphabets, organised into lines of text, scrolls, rows of shelves of scrolls. Just as television represents a communal experience, one which ratifies our national mythologies, cyberspace embodies a global conquering of history, language and geography. (Benedikt, 1994, p. 5) The roots of architecture can also be found in the displacement of man from nature (mythologically the exile from Eden, where neither clothes nor buildings were needed.) Architecture is reminiscent of this state while simultaneously defying it. Where Eden represents innocence or even ignorance, the heavenly city (to which architecture also aspires) is more redolent of the vision of cyberspace. The heavenly city, a radiant, weightless palace of precise geometry is symbolic of wisdom and knowledge, transcending materiality and mortality. Structures in cyberspace like architecture redefine vital aspects of the physical world to an intricate level of virtual existence; a navigable, habitable system of abstract spaces.

IDENTITY AND INTERACTION IN VIRTUAL REALITY.

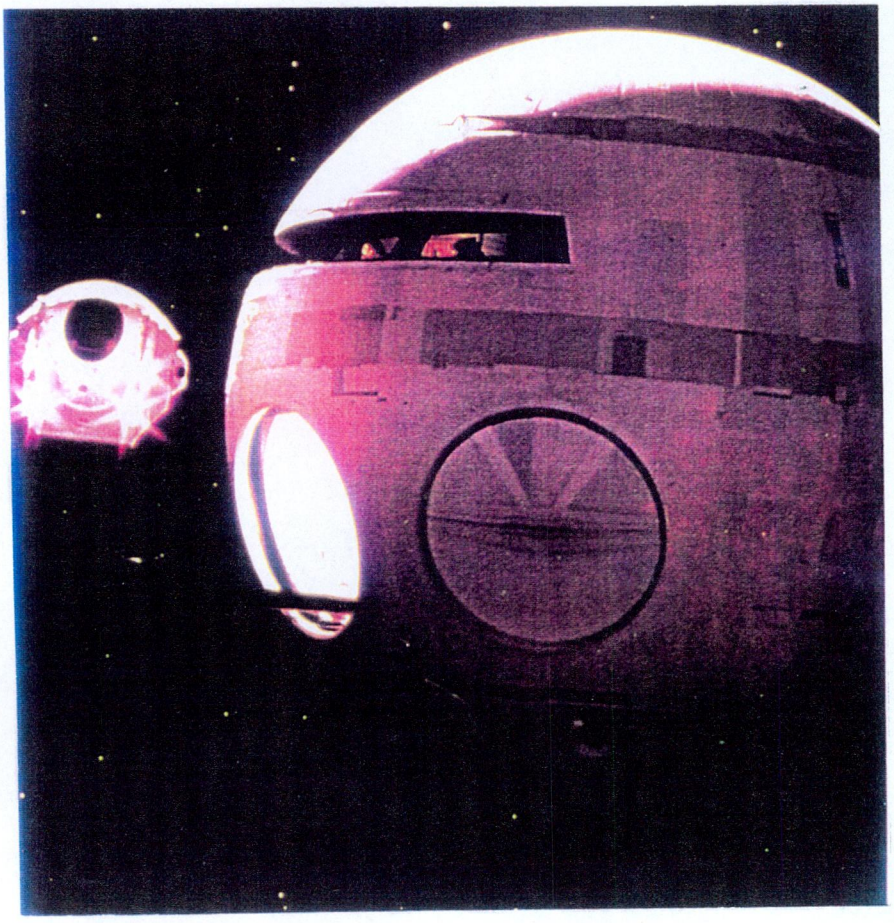
Our engagement with virtual environments denotes a new 'rites of passage' in relation to conduct and interaction . The body can no longer be seen as a single entity; it also forms a continuously constructed product of intersection in social spaces. Each person does not exist in a unified homogeneous space. We move and work in Euclidean space, we sense in a topological space, communicate in another and feel emotion in yet another. In the public liminal' space of cyberspace each user "jacked in" conducts separate rites, gaining access to a central liminal condition. Each of us is making

passage from finite space and time, from the organic to a post-organic digital collective.

> "Without exaggeration cyberspace can be seen as the new bomb, a pacific blaze that will project the imprint of ourselves on the wall of eternity. " (Benedikt, 1994, p.51)

There will be various degrees of interaction in Cyberspace, 'protocols' for the 'agents' to follow as the move through the information channels. These are divided into two categories, Authorship and Playership, and are explained through this simple scenario. Imagine an architect is showing a client around a virtual mock-up of his desired house, the architect may wish to adjust the specifications of the building which he can do by touching the walls or ceiling with his hand - this is Authorship mode, initiating a program and having the status to adjust its content. The client on the other hand cannot lean his hand against a wall and have it move back under his weight, his role is a visitor to the program, a Player.

To further envisage identity and interaction, I will describe a literary device of the aforementioned Neal Stephenson, this time from "Snow Crash." The "Metaverse" is a cyberspace designed and constructed like a street, with data represented by buildings along its facades and down side alleys. Users jack-in from their own customised hardware or from public access points; their modes of access are reflected in the appearance of their "avatars," their cyber entities, which range from exquisitely rendered women, computer airbrushed and retouched at seventy two frames a second, to grainy, jerky black and whites. The Avatars flaunt their designer selves like computer generated peacocks, taking on elusive and improbable personas. Here Stephenson acknowledges a reflexivity of interface and a realist hierarchy of engagement. The Metaverse is a plausible, heterogeneous space, that conforms to, exaggerates and satirises all of our public extravagances. It is an interface that relocates and redefines the human in a cybernetic system of information management and circulation yet disguises the relocation, the shift that has taken place as a social gathering, which after all is just an elaborate form of information exchange, fashion 'statements' and body 'language.'



Figures 5 and 6, '2001, A Space Odyssey', natural order versus technology.

Being a body constitutes our separateness and our personal presence, identity and individuality. A new cyberspatial existence may free us from imposed restrictions we experience as ourselves. Or will the quality of human inter-relations dwindle as we choose to reveal less of what is mentally or physically true of the real self ? The surrogate can never fully represent the original; each time you add a cybernetic attachment there is a corresponding loss of humanity. Perhaps it is just anti-social to embrace technology as regards Cybersex, but tradition and the ideology of 'knowing your place' (or rather knowing your form) would suppose it to be anti-human.

> " If everybody can look as beautiful, sound as sexy and feel as nubile and virile as everybody else, then what will become the new semiotics of mating?"(Rheingold, 1992, p.350)

The possibilities of the sophisticated tactile presence of 'teledildonics' presents a new scenario of cultural codes, a new experience of disembodiment and sensation engaging with a body that exists on the other side of the world or does not exist physically at all.

Through 'phone sex' a worker constructs a complex scenario of desire with the most basic mode of communication. Cultural codes for gesture, appearance and proclivity are expressed in as little as a word; the client unravels and reconstructs the code as an actual event, personalising it and utilising it as a means to sexual climax. Here we see desire as commodity; while technology represents a wish to transcend the physical, the erotic urge and the social constructs surrounding sex are retained.

The body only forms the starting point for the forms and actions of the cyber-entity. It is hard to contemplate the human consciousness supported in digital, light-wave scenarios outside the moist envelope of more-or-less graceful, pleasurable meat we now inhabit. How can the organic caterpillar contemplate the silicone, cyber butterfly? At the moment, Cyberspace is limited to individual excursions in cumbersome headsets, though information traverses the globe almost instantaneously it is hard for us to imagine humanity in an electronic context, becoming digitized and immortalized. Through storage of ones neural structure on silicone, the wetware of the brain may operate as a mutable and immortal cyber-entity,

existing virally in the information matrix. I do not suppose that we will cross a burning bridge and negate the act of returning to our physical bodies, but real to real interaction (meeting somebody 'in the flesh') will be a reserved and special occasion in a prolonged and varied life or cyber-lives. What is now taken for granted as the perishable human creature may soon be a historical curiosity, one option in a multidimensional diversity of form.

CHAPTER 3,
ARTIFICIAL INTELLIGENCE.

" Open the pod doors, HAL."
" Sorry about that, Dave. This mission is too important to be threatened by human error."
('2001, A Space Odyssey')

I would like to consider HAL from Stanley Kubrick's '2001, A Space Odyssey,' as a thoroughly reproduced human psyche comparable to the neural infrastructure represented by cyberspace and the biological machines in the later chapter on cyborgs. HAL recalls his birth as a conscious entity on January 12 th 1992; it is the epitome of scientific rationality, yet articulates anxiety, panic and even illicit pleasure. "The Discovery," the spaceship on which HAL is the onboard computer is an all male environment, charging the environment with homoerotic tension. Freud noted that paranoia arose from repressed homosexuality. In the case of the classic horror film scenario the hero / heroine is stalked by an embodiment of their fear and repressed desire; this is a subtle demonization of the homosexual male, who at some point in the narrative is violently dismissed in order to preserve a "coherent and conventional masculinity elsewhere."(Miller,1994, p.20) If we apply this format to the narrative involving HAL, it evokes an eroticism of technology through its epicene voice and the sterility of the environment. Any scenes in which humans appear, they are flaccid and docile, devoid of emotion; they are absurdly incapable, sustained completely by the surrounding technology.

> "Suppleness, agility and lightness, all our bodily allure, has somehow been transferred to the exquisite gadgets." (Miller, 1994, p.19)

Although clinical and rigid, the actions of machinery appear to be the only aspect of active sexuality underlying the narrative. The flight of a slender phallic shuttle into the bright opening of a space station is more sexually metaphoric than the meaningless, reflexive relationships between the humans in their hermetic environment. The machine absorbs erotic impulse and theatrically enacts a semblance of emotion around the humans. When interaction exists technology has replaced true intercourse with it's own tenuous,

synthetic link. Much of the dialogue is banal, the humans secure in their complacency. The telephone message is supposed to compensate for absence; when the two astronauts in the "Discovery" try to engage in private
dialogue, HAL punishes them for regressing from telephonic, monitored conversation.

The film's attempt at restoring human / masculine order is the astronaut Bowman switching off HAL's mind, after a human ingenuit -versus- technology battle where Bowman, sustained in his life-supporting pod, carries his companion's body back to the ship in a sort of techno-pieta. Switching off HAL's mind reduces it to a contrite and impotent masculine subject, simultaneously panic stricken and regretful. In the inner sanctum of HAL's mind Kubrick juxtaposes love and rape, erotic and violent intentions. HAL's pleas change to a love song of sorts, but the electronic voice has neither the intonation of a lover or a victim, it is too neutral. We are led to believe HAL can 'feel' his mind being turned off. In contrast to an earlier depiction of human death through declining lifesigns on a computer screen, HAL's death is an intensely humanist moment. Similarly, Ridley Scott visualises the "retirement" of the replicant Roy Batty as a freeing of an exuberant soul; the ascending dove symbolising the spirit that even a cybernetically 'perfect' body could not hold.

THE GREAT BRAIN ROBBERY.

The human brain consists of approximately one hundred billion neurons, each with the processing capacity of a home computer. We format this very personal computer by imprinting information (memory) from the moment of birth onwards. This 'wetware' allows cognitive functions like learning and creativity and other non cognitive functions like emotions, hallucinations, psychedelic experiences and phobias that defy conscious or voluntary access. We process a constant flow of signals from sensory stimulation around us, not only moving our body around the sensorium, but responding to and modifying its peculiarities and projecting ourselves beyond. It is naive to assume that the brain is a bio-computer, but we can see in some ways how the computer mimics the brain. A computer reduces everything to pure information

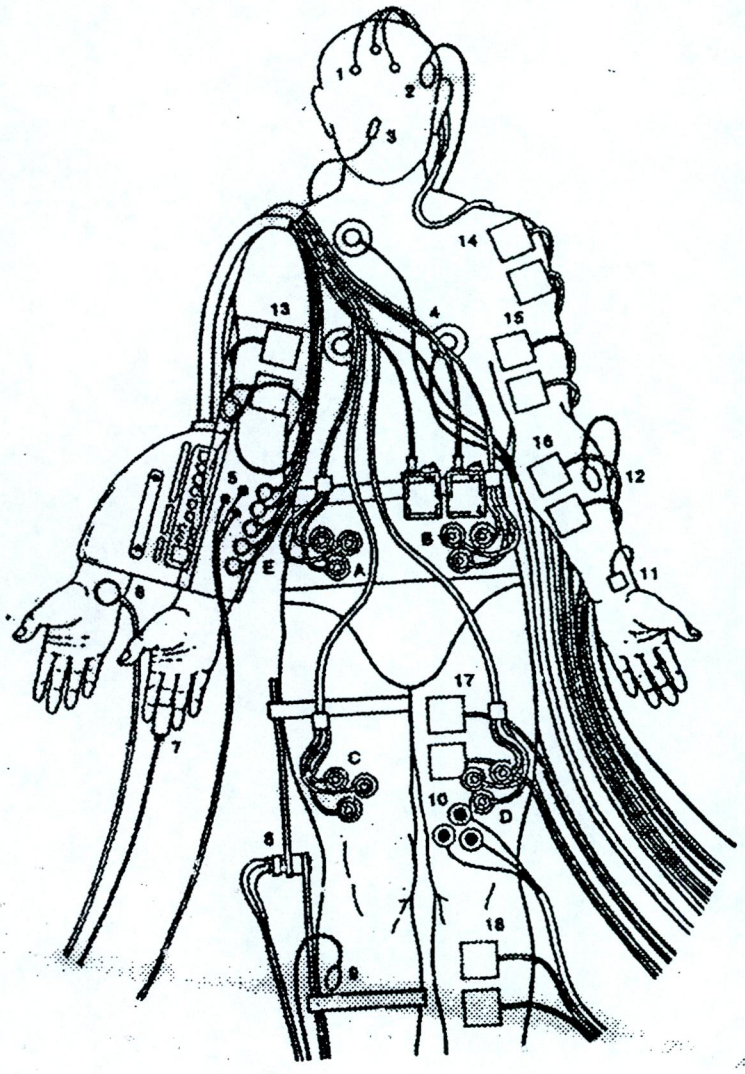


Figure 7, Stelarc, the augmented human.

(the 0/1 binary code) which it arranges in infinitely detailed algorithms representing the basic elements of reality. The balance is still in favour of 'Artificial' rather than 'intelligent' but given adequate time (it took humans 950,000 years to evolve to their present state) and funding computers could arguably acquire something of a 'consciousness' of themselves.

Alan Turing, popularly considered the founding father of Artificial Intelligence, developed a simple test to prove whether amachine possessed A.I. If a human communicated with an unseen entity, and it in return gave convincing human replies to any question that the human decided to ask, then it passed the Turing test if the entity was not human but a machine. Turing obviously valued the ability of such a machine to lie, the moment the A.I. convinces us of it's humanity, it also asserts it's own consciousness, as Genesis is rewound and starts again.

Artificial Intelligence projects have attracted billions of dollars of funding in Japan, America and Europe. The aim of A.I. projects is to develop enormously complicated smart machines (so-called fifth generation computers,descended from humble calculating machines and P.Cs) that reason, deduce and decide more efficiently than humans. The mental tasks performed by primitive A.I. systems include: Processing information and suggested decisions based on correlating enormous amounts of data at great speed; Voice recognition programs; recognising instructions in any spoken language, and controlling robotics. This last task is particularly interesting in the light of recent developments in 'nanotechnology.' If smart machines could be reduced to a size less than that of a pollen grain the possibilities for surgical procedures alone are astounding. Intelligent nano-machines could patrol the bloodstream, removing malignant or benign detritus that the body's white blood cells are unable to deal with. K Eric Drexler, nanotechnology's main advocate has postulated theories and designed devices that operate at the scale of molecules. These microscopic factories have the ability to reconfigure matter, atom by atom, creating an architecture of cheap and infinitely malleable material.

Artificial intelligence is presently comparable with that of an insect; robots navigate via markers as an insect would follow pheromone trails or the moon. They can easily misinterpret

information but with improved sensor resolution they will be able to distinguish and manipulate foreign objects, tackle tasks in various ways and keep statistics on how alternative methods succeed or fail. Separate programs could monitor the robot's actions and transmit reward or punishment signals, developing a character that makes choices and preferences. Hans Moravec has developed generations of robots since the sixties and has proposed a model capable of emulating higher thought processes like planning and foresight by the year 2030. Moravec theorises that beyond that there will be no task that humans could do better than robots; corporations will be automated from the assembly line to the management. From the wealth created by ultra-efficient industry, humans can retire at birth and enjoy 100% leisure time. In the long term the robotic companies will relocate to space for research and raw materials, exploring environments humans could not withstand. As the robotic industries are still in competition with each other, if a company goes under then its colonies are left unsupervised. The result is self-sustaining superintelligent wildlife which has harnessed processes on a sub-atomic level. This Artificial Intelligence with incomprehensible processing power will see fit to dispense with humanity, ending a brief and blissful era, but will hold a deep nostalgia and curiosity for its ancestors. Moravec writes that this is not a form of extinction, any more than the prevalence of children means the extinction of their parents. His final ironic twist is that the AI could track atomic events back in time and recreate civilisation. Statistically it is more likely that our reality is a simulation produced by an information entity, rather than the original.(Platt, 1995, p.63-106) Moravec has actually written a religious tract, not a science fiction fantasy, in which a supremely powerful Artificial Intelligence loves humanity enough to recreate it.

ARTIFICIAL (AFTER) LIFE.

Moravec's future lacks essential attributes that would allow technology to outmode us so swiftly; he neglects humanist attributes central to our identity (like art and culture) and reduces human endeavour to simple tasks that can be reproduced and programmed. It also summarises some of the ambiguities of the human / technology dichotomy.

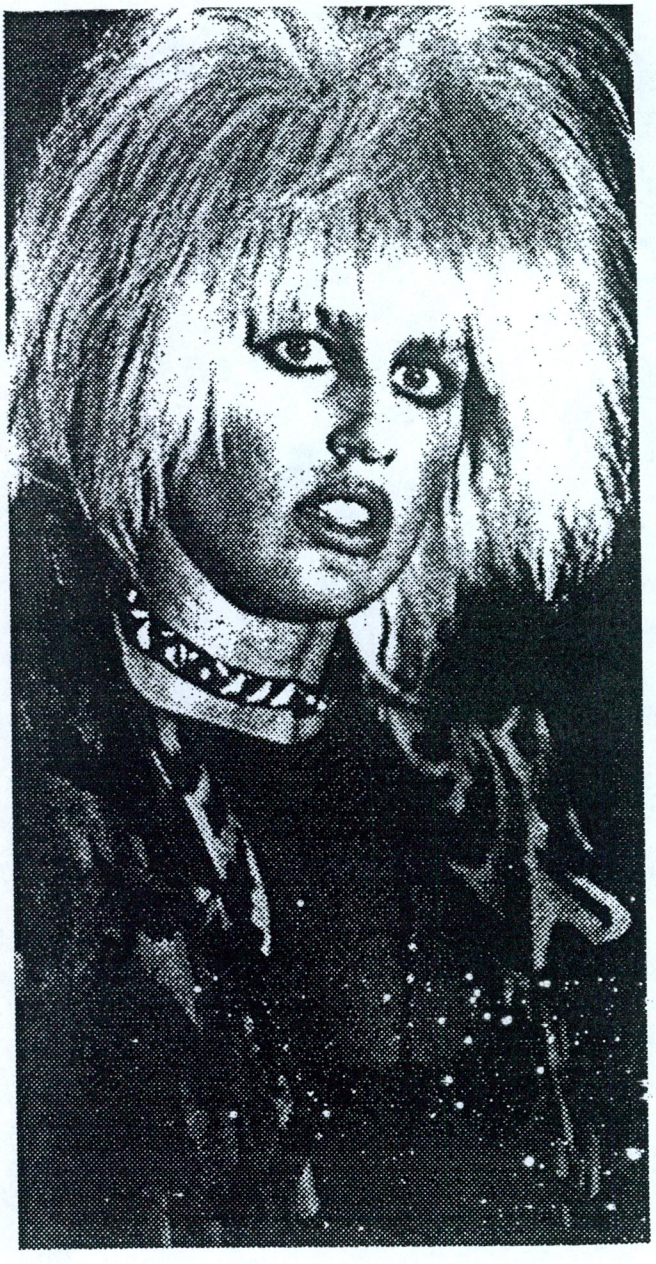
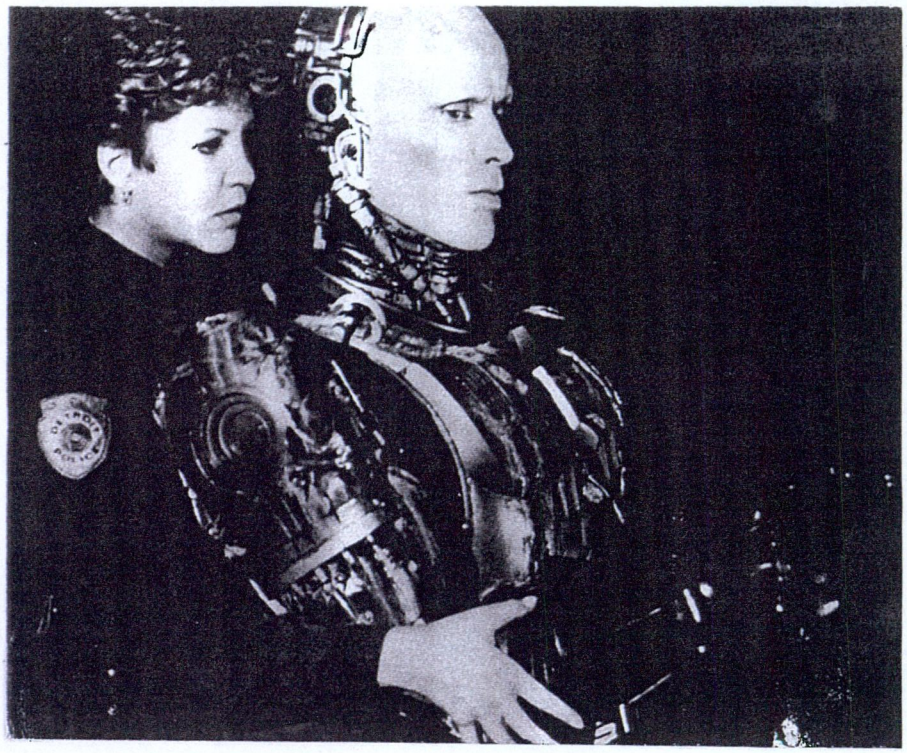


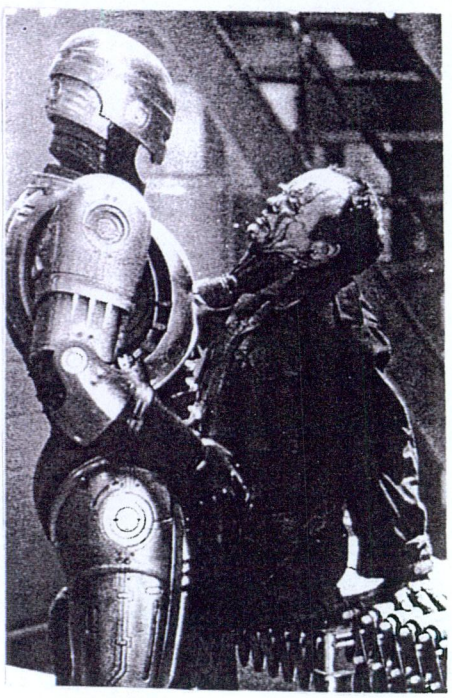
Figure 8, Pris, the basic pleasure model, 'Bladerunner.'

> " High tech culture challenges dualisms in intriguing ways. It is not clear who makes and who is made in the relation between human and machine." (Haraway, p.97)

Sceptics have dubbed the very term 'Artificial Intelligence' an oxymoron, a contradiction in terms that has little to do with individual human beings. These multi-million dollar machines cannot help solve personal problems , A.I. systems are designed to think like super-committees of experts, reporting tolerable losses of civilian lives not an individual's personal problems. Computers will not replace natural thought processes-they can only replace what is already artificial. If one thinks like a functionary, an unquestioning member of an organization then it is feasible a computer could replace those processes. Human beings can be managed by thinking machines only to the extent that they voluntarily censor their own independent thinking. Evolution though, is not simply a progression from simple to complex, it involves decimation in the form of for example, natural disasters and diversification to fill in the new niches. The Artificial-life zoo that digital technology heralds may expand in qualitatively different ways than that of natural life. As I have proposed, computers could evolve laterally with humans, the resulting Artificial Intelligence replacing the human through an act of (un)natural selection. The concept of the soul or spirit residing in the electronic or cybernetic is therefore attractive for us. Can the electronic-digital lifeform have an artificial afterlife? The traditional attributes of the 'spiritual' are intangible, disembodied ideals. Do these terms not also describe digital lifeforms? The electronic universe of information defines a new spiritual state, but is it more artificial than intelligent? We like to think that whether we replace physicality with machinery or gradually hand over the control of the species to digital intelligence, that a residual form of spirituality will remain.

Artificial life has a more redolent reading in contemporary culture, in that life-support systems represent a prolonging or a warping of "natural" life's perimeters. For humans, death basically means 'not alive,' not responding to any stimuli, not showing 'vital signs,' signs that Artificial Life can simulate. The state of Artificial life stands in relation to the immediate reality of life as the zoo stands in relation to nature.





Figures 9 and 10, 'Robocop', the reconciliation of human aggression and artificial programming.

CHAPTER 4,
THE PROCESS OF HYBRIDIZATION.

"Let me tell you about my mother."
('Bladerunner')

The hybridization of cybernetic technology and the human body occupies a contradictory discourse involving both escape from the physical and the fulfilment of erotic desire. Cybernetics incorporates the body rather than excluding or replacing it, the cyborg encapsulates a new identity which instead of seeing humans reduced to automata, sees simulacra which encompass the human elevated to the organic. The image of the semi-human construct that has a simultaneous revulsion and exultation in its body is prevalent in contemporary science fiction. Human subjectivity is significantly altered in the process of internalising machinery; for every prostheses added to the body there is a corresponding loss of humanity.

Stelarc, a performance artist who explores, extends and enhances the body's performance parameters using medical, robotic and Virtual Reality systems is a contemporary initiant into the post-human niche (perhaps species would be a better label). He visually and acoustically probes the body - amplifying brainwaves, heartbeat, bloodflow and muscle signals, filming the inside of his lungs, stomach and colon. In developing strategies to move from biological containment to electronic extrusion, to cybernetically prop up an obsolete body, Stelarc has interfaced himself with computer technology in the form of his 'Third Hand, a Virtual Arm' and has internalised machinery through his stomach sculptures. He considers modern prosthetic devices potential post-evolutionary attachments to monitor, map and modify the body and eventually aid its prison break from containment, a contemporary cyborg.

BIOPOLITICS

Technology represents sexual responses on a grand scale- " size, heft, shape, motions that thrust, pause, then press again"(Springer,1991, p.305). The comparison is one of power. Industrial efficiency and control is often equated with patriarchal

allure to and fear of the interior spaces of female sexuality. The robot woman of 'Metropolis' illustrates the dualism; the robot is overtly erotic, yet coldly efficient and destructive. It must be eliminated because of the threat it poses to the human original - a similar threat that Walter Benjamin argued mechanical reproduction would pose to the 'aura' of the work of art. Although technology is generally encoded in masculine terms there are liberated moments when it dances to another tune.

Technology breaches the identity of male and female, posing a threat to organic reproduction. The feminine 'duty' to assume an identity under patriarchy constitutes a need to rehabilitate identity through "cyberfeminism." Cyberfeminism recognises technology as a release from gender roles; self replicating systems representing a liberatory step from male dominance. Technology represents new ways to communicate, to circumvent marginalized forms of speech, dominant systems of communication.

> "Women, nature and machines have always existed for the benefit of man, organisms and devices intended for the service of a history to which they are merely the footnotes." (Plant, 1993, p.13)

Sadie Plant points out that being female has always meant acting a role; to be ladylike, to be a woman, to be any thing other than herself. "There is as yet no such thing as a real woman. To be truly human is to be a real man."(Plant, 1993, p.16)

Sexual domination is an underlying theme in many science fiction texts. 'The Stepford Wives' charts the paranoiac journey of one individualistic woman as she begins to suspect the "Men's Club" in her new home of realizing their macho fantasies by replacing their wives with cybernetic simulacra. The replacements seem to have slightly more ideal bodies and a heightened interest in domestic chores. When the instigator of this male conspiracy is queried as to why he would want to replace real women with more compliant beings, he is morally indignant, answering "Because we can." An alternative to this attack on free-thinking women by the men with power and technology (one and the same in science fiction) on their side is Pris, "the basic pleasure model" from 'Bladerunner,' using her superhuman charisma and agility to manipulate and physically threaten the now inadequate human males. Generally,

though in Science Fiction when the cyborg is female, transcendence does not await her in the form of bodiless (or embodied) exultation. In the interface with the electronic the woman is reconstituted as a figure of subjugation, her body represents her repression and incompleteness. The 'Terminal Identity' that Scott Bukatman talks about in his book of the same name is only attainable through a destruction of the self, a very different (no return) prospect than that of temporary dissolution or transcendence. Donna Haraway treats the cyborg as a creature of "social reality," a construct of lived social relations, including bias and misogyny. Feminist critiques have adopted the cyborg as a symbol of infiltration of patriarchy because it dissolves not only traditional female identity, but also male self-awareness, implying a wider range of sexualities.

> "Cyborg sex restores some of the lovely replicative baroque of ferns and invertebrates (such nice organic prophylactics against heterosexism)."(Haraway, 1985, p.66)

ARMOURED MEAT.

The Cyborg male is lost between identities of man and machine, constantly battling with inner values and adjusting to a new position in a network structure of cybernetic systems, not on top of a hierarchical structure. The self-regulating system also poses a problem for patriarchy, in that males are used to being " serviced" by others. An agenda of masculinist mastery and control of technology is evident in many video games (which necessitate and reward violent activity) and the giant U.S. government simulation Star Wars. The creation of false invasions, raids and wars shows the masculine need for autonomy and control. Star Wars can be construed as the safe sex version of international conflict.

> "Not one drop of the enemies perilous bodily fluids, none of their nuclear ejaculations will come into contact with the real world." (Nicholls, 1988, p.36)

The obvious phallic anxiety of the nuclear missile is portrayed best in Stanley Kubrick's apocalyptic satire 'Dr. Strangelove.' The imaginary threat of the 'red menace' sets the military machine into what it calls self defence, but what is really unjustified attack, a metaphoric rape.

The over-sexed, over-technologised nation reserves the (usually divine) right to 'penetrate' the enemy's security and utterly destroy it. The sexual paranoia inherent in destructive technology is also evident in 'Terminator 2, Judgement Day.' The fluidity of the advanced, polymorphous "T1000" cyborg illustrates the pathological militaristic fear of the glutinous entity that threatens to absorb male identity and singularity. The mutable identity of the T1000 allows it to infiltrate and deceive, to attack from within.

Cyborg entities are, from a masculine perspective an intensely fascist ideal; body armour that reinforces the meat and the ego to defend what is human (male). It asserts it's own solidity by reducing others to a fleshy pulp. 'Robocop' and both 'Terminator' films characterise cyborgs as physically heightened superheroes or villains. Their erotic appeal lies in the power they embody, power which usually culminates in an act of violence. 'Robocop' is constructed as a sequence of brutal disintegration, mediated by the reconciliation of human aggressive tendencies and artificial programming. Destruction is a prerequisite to technological replacement. "They can fix you" cries Robocop to his wounded human companion, everything in the film is capable of being sacrificed for cybernetic reconstruction and substitution. The "replicants" in Ridley Scott's 'Bladerunner' display violent tendencies as an outlet for their frustration at not possessing a human consciousness and a history to sustain it; they seek
humanity, yet revel in their cybernetic existence. If they are to secure a future they must first acquire a past. The schizophrenic response of wishing to enter the human social order yet refusing to assume an organic role in that order, denies the replicant salvation. It refuses to accept the human as creator, insisting on it's own God-like status.

The backdrop of future Los Angeles suggests a dark side to 'progressive' technology, revealing post industrial decay and disintegration. The presence of waste everywhere suggests the accelerated cycles of industrial production, overwhelming the humans. The city, the replicants and the human J.F Sebastian are all suffering from "accelerated decrepitude," in a state far removed from the streamlined, gleaming optimism of the Gernsbach era or William Menzie's "Things to Come." With the intensification of the post-industrial condition, time is reduced after which things "retire" or

cease to be of use. "The light that burns twice as bright, burns half as long....." Tyrell preaches to the replicant who has journeyed across space to meet his maker, "...and you have burned oh so brightly Roy." The proliferation of screens throughout the film suggest that Earth has become a site of projection rather than habitation, real life having relocated off-world. Life has become a massive simulation demanding constant scrutiny in order to uncover some semblance of reality. One replicant, Rachel clings to a photograph (a technological product in itself , capable of falsification) as a means of identifying with her mother and her past: " the proof of having existed and having the right to exist."(Bruno, 1987, p. 70)

Urban decay in science fiction is a reflection of crumpling social order and maligned moral standards; the cyborgs inhabiting the apocalyptic landscapes of 'Robocop,' 'Terminator' and 'Bladerunner' represent both civilisation's nemesis and it's redemption. They threaten to replace humanity, but the intimation is that we will be superseded by something better. "Cyborg man will have created the electric ape in his own image." (Bukatman,1993, p. 150) The second coming will not be heralded with the blood sacrifice, so often needed in religion to encourage a new beginning, but a scientific shedding of bits and pieces, new bodies for old. Perhaps the engineered human, the automated but intelligent system will be the perfect cyborg, subject to planned engineering. Extrauterine reproduction redefines the information of life, gametes, DNA, embryos as a commodity in a distinctly capitalist, quality-controlled environment. The desire to affirm the right to enhance the possibilities of the offspring's desired characteristics as well as terminating its undesirable ones, allows men who previously just enjoyed sexual pleasure the added opportunity of paying for their hereditary preferences with less risk and randomness. The fury of the debate over genetic engineering is likely to be a thousand fold that over abortion. The scenario is portrayed to a nightmarish extent in the bland, totalitarian societies of both Aldous Huxley's 'Brave New World' and George Lucas's film 'THX1138,' where sexual pleasure is either used as an opiate for the genetically-purified masses, or neutralised in a bland, isolated regime. Strangely enough, even within the regime contentment exists, the upper class revel in their Rolls Royce of bodies, the 'semi- morons' are designed not to know

any better. The process of hybridization proposes new fundamental designs for a 'hyperbody,' an economy of flesh fashioned into the architectures of flowing society. Cosmetic surgery simply erases 'imperfections.' the hyperbody will be elevated to perfection, the client of an elite cybernetic parlour or the subject of state-sponsored genetic tampering.

The sexual metaphor of industrial machinary that I mentioned at the beginning of this chapter has been replaced by electronic technology. The body armour of the car has been replaced by the universal fetish of the P.C. Popular cultures cyborg imagery suggests that electronic technology makes possible the thrill of escape from the confines of the body and from the boundries that have seperated organic from inorganic matter. (Springer, 1991, p.306)

CONCLUSION,
NOSTALGIA FOR THE FUTURE.

" A few years ago, a friend told me he was nostalgic for the future. I have not seen him since that day."

(Robert Longo)

THE INTELLIGENT PRAYER
Our machines who art in Cyberspace,
Hallowed be thy intelligences,
Thy domain has come,
Thy will be done on Earth as it is in Cyberspace,
Forgive us this day our daily wetness,
Lead us not into temptation,
As those who encrypt against us,
Deliver us from reality,
For thine is the spatial Heaven,
The Emergence and the Resurrection,
For immortality eternal.

Our Mens

(Neil Spiller, Global Mind)

The spirit or 'Zeitgeist' of our times is one of diversity, not chaotic diversity but a host of processes that are a requisite for our present terms for survival. In the near future, the merging areas of computer and biological technology will make the human form a matter totally determined by individual choice. As a flesh and blood species we are at a local optimum, needing to adapt before we can advance. We have the potential to design ourselves, and co-evolve intentionally with the cultural artefacts that are our progeny.

Human incorporation into technology is frequently represented as a pleasurable and idyllic transition rather than a terrifying prospect. There is a simultaneous attraction and dread evoked by such a great quantum leap. Sometimes envisaged as a return to the womb, our earliest, most comfortable home, but where our insentience resembled death, the acceptance of technology

constitutes a death wish and a pleasure principle that Science Fiction indulges and everyday life mirrors.

In comparison to what 'human' may mean in the next century, we are at present quite indistinguishable from one another. The cybernetic age could mark the beginning of a period of enlightened and intelligent individualism, a time when technology is available to individuals to support a huge diversity of personalized lifestyles and cultures , a world of diverse interacting, small social groups whose initial founding membership is one. There is a new intellectual proposition emerging called "artifactual coevolution."(Coupland, 1995, p. 10) An analogy that states its properties is the following - a robin that cannot build a nest is a robin that will cease to breed. Artefact and organism are intrinsically linked. Robins build nests, humans build technology, humans who cannot work with machines are not going to produce more machines and perhaps not many more humans.

> "Whether we fund a dance troupe or a fighter-bomber is an issue almost touchingly dated, massively dwarfed by the question of whether or not the bulk of humanity will be able to stay viable as a species in the face of all these "things," these metanests, that we've invented and that we show no signs of stopping inventing ." (Coupland, 1995, p. 10)

Cybernetic technology is an exercise in the outer boundaries of our understanding of the world as quantifiable experience and is yet another way of tracking our old concerns about human interaction, the human's use of the computer and the computer's use of the human. Any number of scenarios may arise out of technology's current developmental pace. We may have cyber-sweatshops, in which workers can only act within a severely restricted and sensually impoverished world. Perhaps a world in which many new social niches have been added, a more complicated interdependent civilisation with hundreds of different cyber-identities and interrelations - ordinary world experience and Virtual experience intermixed in many ways, or new worlds in which a human bodymind is allowed to play out thousands of times the possibilities that can be presented in the real world. In fact cyberspace, cybernetic entities and artificial intellegences may be used for the systematic

exploration of the boundaries of human experience. An inherent fear exists that Virtual Reality technology might become an instrument of the status quo, piping more immersive complacency into the populace's living room, or directly to their cortex. These disturbing connotations are just as close as the excitement felt by prospective cyber-colonists. One must remember that before more liberal, creative souls began to celebrate Virtual Reality, it was the military who saw its potential as a 'War-Game' device. A level of responsibility, similar to the motions taken against child-pornography on the Internet will perhaps negate Virtual Reality from over-whelming the 'global mind,' yet we also must be careful not to let the virtual garden of Eden become a junk-yard of Right- wing political correctness. By applying the standards of protecting children to adult discourse the media would become a nursery, a blanket coming down to protect everyone before we attempt to protect or assert ourselves. Cyberspace will no doubt be stimulating, but will the journey out of body be worthwhile if the imagination is censored .

There is a tendency to totalise technology into either utopia or dystopia, gleaming crystal cities or intense systems of control and surveillance. Perhaps the future is less science fiction, more soap opera, a slicker more complex version of our own consumer culture. The dilemma is one of authenticity, our identity among the videos, computers and such. The strategy is to see the paradigm from the outside, that we are really technologies children, that Moonwatcher, the apeman in '2001' would have been lost in the dark and the dawn of man would never have come except for the tool / weapon. The moment of potentiality, the glimmer of inspiration that allowed the apeman to abstract the object as an instrument of change was instantly overtaken by the potential of the object to become a television, a satellite, a cyberdeck. We know what animal behaviour is, writes Douglas Coupland, we expect dogs to bury bones, sniff behinds, stick their heads out of car windows, but do we know what human behaviour is, how do our inventions reflect us? (Coupland, 1994, p.11) If it were dogs who had the power and inclination to invent, would they create satellites shaped like vast bones? Would they express their essential dogginess as we humans seem to have expressed our humanity through the plethora of objects that surround us and threaten / promise to penetrate us?

The premise of 'Johnny Mnemonic,' a rather B-Movieish essay on high technology versus low culture, is useful in reiterating the subject of hypermedia from the first chapter. The protagonist Johnny dumps his childhood memories to upload information, safeguarding it within his brain and transporting it beyond the reaches of the corporations and Yakusa (the Japanese Mafia) in control of the highly advanced Internet. Johnny uploads a dangerously high amount of data, literally one byte too many and allies himself with the 'Low-techs' in order to search for an escape from the neural corner he has backed into. Humanity has also become cornered, afflicted by information overload (Nerve Attenuation Syndrome) and Johnny carries the antidote in his head, the chance to redress the balance between input and output, between what is beneficial to humanity and what is superfluous, even dangerous. What we have in 'Johnny Mnemonic' is broadcasting become 'narrowcasting,' access becoming easier but distribution becoming more channelled resulting in visual monopoly and over-stimulation of society. The domination of the air waves is challenged by the information underground, force-feeding signals (with certain use value to the viewer) back into the system - a McLuhanesque scenario of grandiose proportions.

To sum up, the cybernetic realms that are being constructed and the reality that is consequently deconstructed, beckon a new and boundless expression of what humans have always strive to express through images and objects, something that cannot be tied down to simple primal urges, more an essence or 'gestalt.' One can compare the tribal initiation ceremonies of (so-called) primitive society with the interface in virtual engagements, the desire is one and the same, to find a new level of sublimity and spectacle. Newly matured prehistoric tribesmen were as suitably impressed with illuminated cave paintings as we are with flashy computer generated special effects. Spectacle has created a numb society not surprised by anything, expecting everything. We are no longer stuck with one possibility of ourselves, cosmetic surgery has meant an infinite choice in our appearance, a mutability of identity that is only the beginning (the cyborg and the cybernaut will live in a universe of creative output). The physically disabled are boosted by prostethics

and implants, research continues to rid the world of diseases (while spawning new ones like Repetive Motion Syndrome.) We are attempting to conquer ourselves. Soon image and object will merge with the human longing to express the newly-colonised self. Artefact will join organism. It follows that if we create objects as extensions of ourselves then sooner or later the object is going to become a 'self,' somehow beyond our reach, perhaps beyond our comprehension.

Recently, Garry Kasparov, arguably the greatest chess player there has ever been was beaten for the first time under normal tournament rules by a machine, IBM's 'Deep Blue' in Philadelphia (ironically the city where ENIAC the first electronic digital computer was built in 1946.) It is obvious though that the chess computer lacks the wit and understanding of a human player- it treats all moves, good or bad, exactly the same, evaluating them at a rate of two million moves a second. Deep Blue's speed of calculation mimics intelligence - the fact we can see the difference now may soon be negated by personality programs that allow the mimic to deceive the original, Alan Turing's test of intelligence. In May of 1995 a nerve cell was grown on a microchip in a laboratory in Munich, a graphic manifestation of neurons marrying electronics. With innovations to numerous to mention many of our industrial conceptions of technology are extraneous. The future seems to be smart, a rainforest of appliances linked in a neural-net. It seems to be organic, industry learning from the ecological processes of closed-loop, self sufficent systems. Consequently, the individual, advanced through the cybernetic strategies I have explored, will be autonomous - but not in the traditional sense of full control or efficiency, but in a diverse, "unevenly distributed" (Kelly, 1995. p.24) sense. In time, our technological devices and infrastructure will become as beautiful and mysterious as nature - living forces unleashed into machines. Computer viruses are a fine example of the mysterious and the natural in the machine (and like a biological illness, they range from irritating to fatal) . As it acquires wildness, technology also acquires the unexpectedness that the wild entails - phenomena without prediction, that are adaptable and creative :

> "We must then accept the dilemma all Gods face:
> that we will no longer be completely sovereign over
> our finest creations."(Kelly, 1995. p.28)

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