Artistic Explorations of Bodily Prosthetics

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Bachelor of Arts (Visual) (First Class Honours)

Submitted in fulfilment of the requirements of the degree of
Doctor of Visual Arts
Queensland College of Art
Griffith University

Submission date: November 2004
ABSTRACT

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The advent of the computer has encouraged a surge in investigations into prosthetics by artists and others inquiring into the potential of bio-techno-scientific invention to overcome the limitations of the so-called 'normal' human body (brain included) through technological augmentation and genetic manipulation. However this trend has tended to obscure a lesser-known trajectory of inquiry-driven practice undertaken by artists whose bodies have become both physically and neurologically impaired through accident or illness.

From the perspective of artist living with such impairment, a critical artistic inquiry is conducted that intersects two prevailing notions of the prosthesis as they are imagined and enacted by artists: compensatory prosthetic augmentation of the so-called 'disabled' body, and bio-tech prosthetic 'enhancement' of so-called 'normal' (or 'able') bodies for a high-tech future.

This exegesis reflects critically on a series of sculptural works arising from this investigation that were created for both contemporary gallery context and public places. It elaborates the transformations that occurred – technological, methodological, psychological, and conceptual - when 'disability' became the locus of artistic engagement with cyborg figurations in contemporary cultural discourses.
STATEMENT OF ORIGINALITY

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Brad Nunn
28/11/04
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ACKNOWLEDGEMENTS

I wish to acknowledge the guidance I have received from Associate Professor Pat Hoffie and Dr Glenda Nalder during my research project.

Thanks must also go to Marilyn Carney and Paul Jolly for giving me the initial 'push' needed to commence this project.

The leap from Mac to printed page has only occurred due to the skill and persistence of Rosz Craig and Neil Degney.

Finally, this project could not have been completed without the assistance and support of my loving wife, Shannan Bilicki.
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BIBLIOGRAPHY
0.0 INTRODUCTION: Beginnings

0.1 The lens

I will begin this exegesis by explaining that the focus of my research project has entwined with and fed off my personal life story. I am a professional sculptor, public artist and researcher who experiences a malfunctioning body, a body that has in the past been labelled ‘disabled’, but now a body that I understand as impaired. Yet, this situation has not always been the case, for when I was a child I possessed a ‘normal’ healthy body. This transformation, combined with pertinent incidents throughout my life, I believe has imbued me with an unusual lens through which to explore the phenomenon of the prosthesis and ‘the body’. (Please note that I use the term ‘the body’ to refer to the cultural conception of corporeality and when I refer to ‘my body’ I am speaking about my physical being.)

0.2 Possibilities … a marriage between technology and the body

The possibilities afforded by a marriage between technology and the body have come to entice and intrigue me.

In recent years the discourses of cyberculture have speculated on the potential of technology in reconfiguring, or redesigning, or reshaping, or evolving a body that will overcome the limitations of the fleshy body. As my body is impaired I heartily welcome these promises and I yearn for the day that my deviant flesh be corrected by a technological intervention. But still, I am very much aware that day has yet to come and those promises have yet to be delivered.

Even though I optimistically look towards this fantastic future, I nevertheless cannot dislocate myself from the reality of the present. I find that these two binaries, these two understandings, have become reflected and extended
onto the way that I know of my self. Here, this self-knowing is expressed in the form of a left side good / right side bad dichotomy. Viewed from the good, normal, obedient and positive aspect of my bodily perspective, my thinking and my art embrace the fantastic possibilities of a future bio-tech body. And yet, seen from the bad, dysfunctional, disobedient and deviant aspect of my bodily perspective, my thinking and my art probes the reality of impaired bodies and the way it is possible for them to ‘know of’ their disability aids.

0.3 Taking up the challenge

The common element to both the above perspectives is the matter of technical augmentation of the body. My personal awareness of this issue has led to my studio and theoretical research which in part probes a number of possible relationships that might be perceived to exist between the evolved and the developed, the body and technology. More specifically, in a reflection of my own situation, I have followed two linked trajectories as pathways into this research. These are the prosthesis as viewed from the perspective of the impaired body, and the prosthesis as understood from the stance of bio-tech speculations. These explorations were conducted under the structure of my Doctoral research project titled ‘Artistic Explorations of Bodily Prosthetics’. In this journey I investigated a number of pertinent concepts, and compared and contrasted my artwork with that of three noted artists dealing with issues of bodily prosthetics. This exegesis narrates this odyssey and relates the transformations that have taken place in my art practice because of it.
0.4 Prosthetics … paths to a definition

At this point it is necessary to define the meaning of the term ‘prosthesis’ as used in this exegesis and to explain the paths I have taken to arrive at this definition.

A generic dictionary like *The Concise Oxford Dictionary* defines prosthesis as “an artificial part supplied to remedy a deficiency, e.g. a false breast, tooth, leg, etc…” (Allen, 1990:960). In 1997, some years before the commencement of my doctoral study, I staged an exhibition titled *IRONHAND* (discussed in more detail in Part Two) that broadly looked at equipment fitting this definition. On reflection, however, I felt that the term could mean more. At a basic level I saw an analogy between items like artificial limbs and disability aids such as wheelchairs or specialised eating utensils because they all shared a common role of augmenting an imperfect body (through the interface of flawed flesh touching items of technology). Also, around about the same time (from my observation and conversation with other physically ‘imperfect’ people), I became aware that the users of these types of body extensions often embodied them in certain ways, and that these devices played an important role in forming the subjectivity of their owner.

I continued to pursue these notions in my artwork and in 1999 I was awarded an Arts Queensland Development Grant to stage an exhibition called *CUSTOMISED* in which I uncommonly represented (and attempted to humanise) the general impression of disability aids. (This work is examined in more detail in Part Two). Yet even after that show, I still felt that the way that I understood the issue of prosthetics could be greatly expanded upon, especially in regard to critical discourse on the subject. Therefore, to improve this shortcoming, I decided to return to university study to investigate these issues in depth.

During my studies I compiled a literature survey, and found the most relevant methodologies applicable to my investigation were feminism, cyber
feminism, cyborg theory, post human bio-tech speculations and disabilities discourses. A recurring notion that I encountered in a number of these fields was that “the enabling power of technology could be identified in the form of a prosthesis” (Lury, 1998:17). Whilst I drew upon that notion in what follows, I nevertheless still felt that this concept sponsored too broad a definition for the standpoint of my research.

After much questioning I found the definition put forward in an article by Heidi J. Figueroa-Sarriera to be the most suitable for guiding my investigation. In The Cyborg Handbook (1995), Figueroa-Sarriera suggests, “the word prosthesis is used to indicate an artificial device designed to replace a missing part of the body, but also a device which extends the radius of action of an organism” (Figueroa-Sarriera, 1995:131). I warmed to this definition. I saw it to be rooted in fact, but I also saw it to provide sufficient leeway to deal with the issues of the body and technology that I was examining.

0.5 Context for the artwork and this exegesis

I am a sculptor whose primary interest is that of an object maker. I have been practising professionally in this discipline since 1990 (when I completed my Bachelor of Arts degree) and therefore the studio work that I produced for my research project is sculpturally based.

The purpose of an academic exegesis is to provide a critical context for the works that were produced over the period of the student’s candidature, and more specifically, the cohesive body of works that are to be exhibited as the final submission. However this convention of the final exhibition will not be followed in the case of my submission. This is firstly because the two tangents of my research (the prosthesis as seen from an impaired or bio-tech-future viewpoint) have given birth to two stylistically and conceptually different bodies of work and I felt that exhibiting them in the same room would be counter productive. Secondly, my art practice also comprises work for two discrete audiences - a general public (art for public places) and a
contemporary art audience (the art ‘institution’). Because of these circumstances I have requested that the examiner visit two locations to view my work.

Firstly in the Queensland College of Art White Box space I will display (Machine Gun) Walker, an installation that confronts the reality of human mortality and power through references to disability aids. This work was initially exhibited at Brisbane’s Institute of Modern Art in April/May of this year. When I discuss this installation, I will refer to it as it was displayed at this earlier context.

The second presentation comprises a public artwork titled Cyber Ray, which is permanently displayed at 175 Eagle Street, Brisbane. This work engages the discourses of cyberculture. It is a metaphor for a ‘re-designed’ post-human body - a possibility if information and communications technologies become incorporated into the body of the user.

Other works produced during my study will be presented through photographic documentation accompanying this paper.

0.6 Structure of the exegesis

The content of the remaining sections of this exegesis is as follows:

PART ONE: The cyborg from the wrong side of the tracks addresses issues of research, and probes the nature of the theoretical concerns that underpin my research.

PART TWO: The cyborg in the studio addresses theoretical concerns, concepts, ideas and thoughts behind the studio work.
PART THREE: *Transitions* gives details on the developments of techniques and processes during the doctoral research phase and also discusses important issues arising through practice.

PART FOUR: *Resolutions and transformations* examines the meaning of these transitions and elaborates on the implications of the research outcomes for my future practice.

0.7 Realisations

At the outset of this paper I must admit that I was intimidated by the thought of compiling an exegesis. Like many artists that I have spoken to, I have found it easier to analyse other artists’ work than my own, which is, of course, an index of the impossibility of an ‘objective observer’ position in relation to one’s own work. However through this endeavour, I have come to realise that I have learned much … not only about my work but also about myself. This growth in self-awareness will become evident as I explain how I understood my art at the beginning of my doctoral study, and then at its conclusion. This transformation will be elucidated in the next four parts.
1.0 PART ONE: *The cyborg from the wrong side of the tracks*

1.1 Boyhood and Super-Borgs

As a male child growing up in the 1970s, I looked into the past and toward the future for my heroes. They came in many guises, from Robin Hood to Captain Kirk; however, in the way I’ve come to understand prosthetics, two stood out.

The first was Douglas ‘Tin Legs’ Badder, a real life WWII British fighter pilot. As a result of a pre-war air crash he became a double leg amputee. Yet despite this horrendous setback, he still managed to become a fighter ace and national hero during the Battle of Britain. Although Badder’s prosthetics simply acted to normalise his appearance and to somewhat equalise his abilities with his peers, to my innocent understanding, they were the accoutrements of a hero.

The second prothetically clad hero was the fictional TV character Colonel Steve Austin, a.k.a. the Six Million Man. The story went that, as the result of an experimental space ship crash, Austin lost both legs, an arm and an eye. Science came to the rescue, and Austin was fitted with (super) body replacements. With his new limbs he could now run like a cheetah, jump over tall walls and bend iron bars, and with his new ocular prosthesis, he was granted a god-like vision of the surrounding panorama. Austin’s prosthetics acted to equalise his appearance, but more importantly, to make him super-human, (a ‘superman’).

1.2 Bodily Malfunctions

I dreamt of being like my heroes, of surviving a right of passage and possessing a body that had been repaired and upgraded by technology. I wanted to be super man, what we now know as a cyborg, in all its glory. But
then, as a twelve-year old child, my dream began to fray. Without warning, I lost most of the vision in my left eye. The diagnosis was that a parasite, the protozoa toxoplasmosis, which had been dormant in my body since gestation, had become active and consumed a substantial part of my left retina. My hero Steve Austin would simply have had another prosthetic eye fitted, but alas, this was not the case for me. I felt cheated; there would be no technical intervention to restore my sight. I would simply have to get used to living with the impairment of monocular vision.

Not long after that first episode of bodily malfunction, another occurred. In this case it was the spine curving condition, scoliosis, which is prevalent in my family. My curvature turned out to be moderate, but this was not the case for my (slightly) older sister. Her curvature was excessive and required major surgery to rectify. Her spine was exposed, several vertebrae were fused together and a short metal rod was permanently attached to her spinal column. She now possessed an internal metal prosthesis, permanently integrated with her fragile body. Her implant aimed to correct an ‘abnormality’ or deviance from the norm; but unlike Steve Austin’s prosthetics it did not furnish her with super powers, quite the opposite in reality. Subtle spinal movement was lost forever and for the rest of her life she has to be on guard to protect her embedded charge.

1.3 ‘Disabled’ Living

In 1993 I commenced Honours in Sculpture at Queensland College of Art. Life seemed to be enmeshed in art theory when out of the blue, I suffered a brain haemorrhage, an arterial veinel malfunction. Speech and language failed me, and I lost control of the left side of my body. From that point onwards, I understood what it meant to be disabled and became ‘othered’ by society.

[Activists claim that disability is a social construct of disempowerment where “disabled people are people with impairments who are disabled by barriers in society”, whereas impairment simply notes a “lacking all or part of a limb or
having a defective limb, organism or mechanism of the body” (DEMOS: February 2003).]

I was wheelchair-bound for several months, yet there was nothing wrong with my limbs. I simply needed to repair or replace my processor. The Six Million Dollar man was a lie, science could not repair me, upgrade me, make me better than before.

To prevent the tendons of my non-functional lower left arm and leg from shrinking, enclosing supporting braces were fitted. I received my first customised ‘disability aid’ – a ‘Universal Knife (Rocking Motion)’; a crooked-neck knife that is designed to cut food by the action of rocking over it and thereby eliminating the necessity of requiring a fork-holding second hand. As I travelled to the dining room in my wheel chair, with braced limbs and clutching my special knife, I truly was a cyborg but alas, one who was ‘from the wrong side of the tracks’.

1.4 Cyborg Being

My wilful claiming of a (second rate) ‘cyborg’ identity has been an important factor in the way that I have come to ‘know’ the prosthesis. It is important at this point of the paper for the reader to be informed of the background of the term ‘cyborg’.

Briefly, the etymology of this term is based on the conjunction of the words ‘cybernetic’ and ‘organism’, that is a melding of biology and technology. The scientific term ‘Cybernetics’ was coined within a WWII military context by
Norbert Wiener and later translated into industrial use. Wiener aimed to develop a language and techniques to ‘attack’ the problem of control and communication. His text *Cybernetics: Or Control and Communication in the Animal and the Machine* (1947) displaced this war-time endeavour from the contest with fascism and communism to the battle with "Nature’s tendency to degrade the organized and to destroy the meaningful ...” In the 1960s two American scientists, Manfred Clynes and Nathan Kline, took this understanding to the next level by penning the conjoined term ‘cyborg’. Their writings promoted the benefits of a technologically enhanced man, one who would be suited to survive the rigours of space travel and extraterrestrial exploration (Clynes & Kline, 1960).

Mid 20th Century critiques of the mass-media focussed on the prosthetic potential of television – ie, ‘vision at a distance’ (McLuhan, 1964). Now, through exposure to more recent (movie and television) characters like Robocop, The Terminator and the Borg, as well as the evolution of the Internet and its definition as a cybernetic space (or ‘cyberspace’ – a term coined in 1984 by writer, William Gibson in his sci-fi novel, *Neuromancer*) the hybrid term, cybernetic-organism (or cyborg) has come into everyday use.

However my self-identification as a second rate version of this concept raised a series of important questions that I had to address in this study. These were:

“What do I exactly mean by this term, and what was the path that led me to this comprehension?”

“How do I understand the relationship between the cyborg and the prosthesis?”

“How has my art been influenced by this figuration?”
1.5 The academic cyborg

When I started to deal with the above questions it became apparent that the most important contemporary academic who theorised the cyborg was Donna Haraway. Haraway, a biological scientist and feminist historian, gave the term heightened meaning in the early 1990s when she appropriated the notion for her influential works *Simians, Cyborgs, and Women* and *A Cyborg Manifesto*, canonical feminist critiques of science and technology. To Haraway, and her followers, the cyborg is a figure of liberation, “a figure born of the interface of automaton and autonomy” (Haraway 1989:139). In this conjecture, the hybrid being would be a chimera, a body that is part organic, part technological, and most importantly to the author, an entity that has the ability to negate to the dualisms of gender, and of nature and technology.

These enigmatic treatises of Haraway’s spurred the establishments of cyborg discourse and cyber feminism, and it was these discursive critiques that initially underpinned my artistic explorations of bodily prosthetics. However, unlike Haraway, my primary focus was not so much on gender issues, but rather on a discursive dissection of this ‘unholy marriage’ between technology and flesh, and how this union had been taken up in an expanded range of academic and aesthetic discourses.

1.6 The cyborg and the prosthesis

As I began to probe the matter of the impaired body and the prosthesis, my first stop was people who are identified as ‘real life’ archetypical cyborgs. Some pertinent examples are: pacemaker and artificial limb recipients, the much theorised Stephen Hawking and his vocal prosthesis, and at the hi-tech level, the jet fighter pilot ‘wired’ into his cockpit and augmented with a laser enhanced vision. To my understanding, the technology inherent in these cyborgs corresponded with the definition of prosthesis that I was using, (articulated earlier in this paper as “an artificial device designed to replace a missing part of the body, but also a device which extends the radius of action...
of an organism”). However when I began to think of this on a deeper level I became aware that I had to respond to the problematisation of the cyborg in contemporary critical discourses as a category open for over inclusiveness. This troubled me deeply.

Many critics claim that the over-use of the term cyborg, and its hazy uncertain borders, has made it worthless as a defining term. In her text *Cyborgs, Virtual Bodies and Organic Bodies*, Susan Hawthorne argues that the definitions of cyborg are “too inclusive to be useful”, that there is no clear cut-off line” (Hawthorne, 1999:217). I desperately wanted to claim a cyborg identity, yet I also had to respond to contentions like Hawthorne’s that, if you interfaced with technology by wearing devices like roller blades, or riding a bicycle, or driving a car, you were a cyborg, and consequently, we could all claim that status. Furthermore, by taking this argument further, one could claim that the roller blades, the bicycle, the car and in fact all enabling technologies, could be classified as prosthetics.

As indicated in the introduction to this exegesis, I was not particularly concerned with exploring the broad notion of technology being identified as prosthetic, but yet it appeared that my journey had returned to its point of origin. Therefore, to escape this ‘Catch 22’ I needed to devise a means of differentiating between this general idea and the conceptual focus that I wished to adopt in my own inquiry into the phenomenon. In the end I found the answer to this conundrum in the performance art of Rebecca Horn, Stelarc and Ju Gosling.

1.7 Performing the Cyborg

Choosing the work of performance artists to guide my inquiry into this phenomenon may, at first glance, seem strange, as I am an object maker not a performer. Yet these artists have all deeply influenced the way that I have come to understand the cyborg and the prosthesis. One of the things that struck me about Horn’s and Stelarc’s performances was that when they were
fitted into their strange body extensions I could conceptualise their bodies as sculptural objects, spatially active entities that possessed complex or extended structures. In this guise, they could be seen to be body-machines with the performers and their prostheses becoming one as they (temporarily) live their art.

In this conception the work of these artists resonated with the way I ‘live my impairment’ - an existence that is marked by my strange disability aids. When I grasp my special knife, I feel like a body-machine as I see this device to be a true extension of my body. However I also am aware how different it looks to every other knife that I have known. As I type, and my fingers glide over the keys of my bizarre ‘Maltron’ keyboard, I frequently acknowledge how important this device is in maintaining my standard of living. Before my stroke, computer keyboards and cutlery were just ‘faceless’ tools. However now, I not only recognize the role of my special tools in rectifying my physical shortcoming, but also how they mark the distance that I have “travelled from my original physical condition” (Wilson, 1995:240). Therefore, in response to the problem of the over-inclusiveness, and therefore emptiness, of the terms ‘cyborg’ and ‘prosthesis’ in this paper, I will follow Robert Rawdon Wilson’s lead. Featherstone and Burrows (1995:3) suggest that Wilson indicates that the term cyborg be understood as a continuum, whereby it

“...need not only be taken to immediately refer to the new dramatic possibilities which are to be found in the pages of cyberpunk and science fiction novels - the use of a pair of spectacles is a prosthetic device which can be placed near to one end of the human/machine combinations that make up the cyborg.” (Featherstone and Burrows, 1995:3)
Following this approach, I propose that the term prosthesis be seen to exist as a continuum whereby the truer health care items are sited in the centre and the generic notions of technology are sited near the periphery.

1.8 Horn

When I became informed of Horn's surreal performances of the late 1960s and early 1970s I felt an affinity with her practice because, like mine, it has a foundation in trauma and the damaged body. As an art student in the 60s she had an accident with fibreglass resin and suffered severe lung poisoning. She spent a year in a sanatorium and whilst there was heavily influenced by her medical surrounds and her recurrent use of bandage like wrappings in her performances can be seen to be indicative of this time. In addition, I also admired the strength and simplicity of her low-tech 'designer' prosthetics. From my personal interpretation of her performances, I suggest that when the artist donned these she became a ‘low-tech cyborg’, equipped with hand made devices of cane, wood, leather, bandages etc. (Hess, 1995).

REBECCA HORN, *Finger Gloves*, Performance, 1972
For some time after my first acquaintance with Horn’s work, I thought the biggest difference in our treatment of issues surrounding prosthetics lay in the agendas we had chosen. In particular, sizable portions of this artist’s filmic performances explore the notion of female empowerment; and whilst my own explorations are marked by gender (maleness) I do not specifically focus on the capacity of a prosthesis to address the asymmetrical relations of power based in gender differentiation.

The critic Giuliana Bruno argues that one of the major influences on Horn’s practices has been the ‘myth’ of the ‘bachelor machine’. Visually this image is represented as the mechanical device found in the lower section of Duchamp’s *The Bride Stripped Bare by Her Bachelors, Even* (1915-23). In theory though, the imaginary bachelor machine can be seen to designate “an aesthetics of machines that inscribes the body in its relation to sexuality, the social text, psychological topographies, forms of authority, and the working of history” (Bruno 1993:80). Additionally the bachelor machine ”is known to be gendered”, for its identity is male. It “does not agree to write the woman as well [as the man]” (de Certeau, cited in Bruno 1993:80). Horn responded to the male vision of the bachelor machine by creating female body-machines. In many of her solo performances, the body and prosthesis can be seen to fuse together to form mechanisms that question and challenge sexual perceptions and differences. In this role the artist ‘writes’ the woman not as an object of desire, but rather as an empowered, sexual and sensuous self.

Several months ago as I was reflecting on Bruno’s argument, and on Horn’s practice, I found myself having to admit that I hadn’t fully considered my own gendered position relative to the work I was reviewing and creating. Whilst I had registered the aesthetics imbued in the low-tech cyborg as definitively feminine, I had not entirely considered the aesthetics of my own sculptures, which are, as I argue below, classifiably masculine. In many ways, I am the bachelor machine personified.
1.9 I am the Bachelor Machine

I am a white middle class man who was brought up 'in my father's workshop'. My techniques and my sense of design can be seen to draw upon and to celebrate 'the coming of the mechanical age'. For example, the origins of the skeletal like framework that is used in many of my sculptures can be traced to a boyhood interest in WWI bi planes and airships. Apart from my reading of W.E. Johns’ *Biggles* novels, I also was interested in how early flying machines worked. It seemed that time after time my interest was drawn to factory photos of these contraptions in the process of construction. I saw the lightweight but strong wooden airframes, devoid of their skin-like canvas coverings, to be absolutely fascinating and beautiful structures that were also imbued with the potential to defy gravity and fly. In hindsight, I believe these types of memories to be one of the major reasons that I follow the trait of suspending my sculptures and constructing them as lightweight wooden skeletal like structures.

Contemplating these insights, I again see myself to be straddling a divide. I am a part of the patriarchy, but I can also identify with being an ‘other’; and yet paradoxically, it is also through my masculine aesthetics that this ‘other’ speaks.

1.10 Different positionings

Importantly in the above point, I see my positioning to be fundamentally different to that of Stelarc. Whilst my work has been greatly influenced by his art and his writings on prosthetics and the potential of a bio-tech evolution, I nevertheless find his approach incomplete for my purposes because the perspective he utilises to sight these quandaries is solely situated from the position of the unmarked and powerful; a middle aged white male who possesses a fit and healthy body. Saying that, I do not wish to negate the important work that he has done, as I see him as a heroic figure, an artist philosopher whose work powerfully addresses a re-thinking of what it means to be human in the 21\textsuperscript{st} Century and I will discuss this notion further in Part Two.
2.0 PART TWO: The cyborg in my studio

2.1 Early years

I now wish to discuss my studio work in depth and point out a number of theoretical concerns, concepts, ideas and thoughts behind many of the works. I will start this examination by firstly focusing on the doctoral works that investigate the prosthesis from the lived reality of my impaired body.

As I mentioned in the introduction, before I returned to university study in 2000, I had already staged two exhibitions, IRONHAND (1997) and CUSTOMISED (1999), where I represented possible associations that could exist between a range of health-care based prostheses and the dysfunctional bodies for which they cater. After my return to study I continued this exploration, staging an exhibition in 2001 titled GRASP and the installation (Machine Gun) Walker in 2004.

The works in these shows generally represent disability aids either from a whimsical or darkly humorous stance [IRONHAND, CUSTOMISED, (Machine Gun) Walker] or from a more contemplative position (GRASP). My approach in these works was to purposely choose not to employ facsimiles of the human body, but to instead expressively re-represent inanimate objects where the human user is represented only through absence.

2.2 Iron Hands

I shall not spend a long time in examining the theoretical concerns behind the works in the exhibitions titled IRONHAND and CUSTOMISED as at that stage my ideas were in their infancy. It would be more useful for this exegesis to reflect on certain pieces and examine how they have shaped my recent work.
Of the many pieces that were part of these early exhibitions, the most significant for this discussion was *Iron Hands*, which comprised two painted low relief carvings of artificial arms. These oversized objects, of a scale more than double life size, appeared to be a cross between medieval armour and splint like devices, and with resonances of Michelangelo’s *The Creation of Adam* (1508 – 1512), arranged so that a pointing finger from each hand almost touches the other. What is interesting for my argument here is that the hands symbolise ‘my hands and my being’. Many times I’ve looked down at my real right hand, which has very little feeling, and found it scratched or bleeding. So when I was making the work I thought it appropriate that my hands should be represented covered in protective armour. Yet it appears that my experiences always rise to the surface, and consequently a right (armoured) finger and parts of that hand are bandaged. The opposing left hand completes the story. Whilst the (armoured) hand is undamaged, on its little finger a ‘forget me not’ knot is tied. This was to remind me of the fully functioning body that used to be.

*Iron Hands*, 1997, carved plywood, paint
40cm (H) x 56cm (W) x 0.5cm (D)
2.3 Do I have the right to see?

I wished to raise the above allegory because I wanted to discuss a troubling issue that I continually confront when I'm undertaking work that is based on disability aids, and that is, ‘do I have the right to see from the vantage point of the subjugated’. In *The Persistence of Vision* Haraway argues that appropriating the vision of the less powerful and claiming to see from their viewpoint can lead to a romanticised vision of the subjugated. She explains “to see from below is neither easily learned nor unproblematic, even if ‘we’ ‘naturally’ inhabit the great underground terrain of subjugated knowledges” (Haraway, 1998:193). I must put on record that I in no way claim to represent others living with bodily impairment, or even understand the myriad of stories behind the dysfunctional body and its prosthesis; what I do claim however is that the life changing experiences that I have progressed through have opened a sliver of a window which has afforded me a particular perspective on the human condition. But still, even with the grace of alternate knowledge, this is still a problematic terrain. In trying to negotiate these hurdles I usually approach my work in one of two ways. In most of my explorations I begin a series with a prosthesis that I ‘know’ or can relate to in some way, and then expand on the topic. Alternatively, when I deal with prosthetics with which I have a lesser relationship, I try to address the subjects with detachment. This is to follow Haraway’s recommendation, to become a “split and contradictory self… one who can interrogate positionings and be accountable…one who can construct and join rational conversations and fantastic imaginings…” (Haraway 1998:195). But still, even with these approaches, the ethics of my interpretation of these issues weigh heavily on my decision to pursue a line of exploration or not.
2.4 Bull Rider

An important avenue to my understanding of other peoples’ stories has been my employment with Access Arts, a Brisbane based organisation that aims to foster artistic growth in people with disabilities. Between 1995 and 2000 I conducted several workshops for Access Arts, each running for three hours a week over a six week period. In this context I generally found that the participants and I shared a common view to life: that sometimes bad things happen but there is no use in moping about, you simply have to get up again and make the most out of life. This observation had a significant impact on the work shown in CUSTOMISED.

Irony and black humour flavoured the large painted plywood relief carvings in this exhibition and all the prosthetic objects that were depicted were shown in forms many times life size. Also, they had all gone through surreal modifications and this combined their exaggerated scale and monochromatic colour scheme these ‘relatively familiar’ objects to look ‘strange and unfamiliar’. This show was the first that I had undertaken where a distortion of scale had been on my mind from the

*Bull Rider, 1999, carved plywood, paint*  
145cm (H) x 95cm (W) x 6cm (D)
beginning and the knowledge gained here proved invaluable for my future work. I will speak more of this issue in the following section.

The work that I feel best sums up the show is Bull Rider, where a riding spur is attached to an artificial leg. It was my intention that this image could be seen to signify pride in being the ‘other’. The work is now in the collection of Access Arts and an image of the work has been used on numerous occasions for their promotional and educational publications.

It is also worth noting that three of the five works exhibited in CUSTOMISED were fashioned after walking aids, influenced by my experiences of having to learn to walk again with a residual limp and impaired balance. Furthermore, the act of walking is central to one of the culminating works, (Machine Gun) Walker which I will discuss in more detail later in the exegesis.

2.5 GRASP

The next exhibition under scrutiny is GRASP, the most self-referential work that I have undertaken so far. This work was very different to that exhibited previously in that it did not comprise relief carvings, but was, instead, a composition of three large suspended, skeletal constructions and a slide projection. (At this point I wish to note that my original intentions in making these devices much larger than life was to give them a surreal air and also to endow them with a strong visual impact. It was only through reflection after the exhibition was finished that I fully took on board that “the monumental is associated with power and status” (Greeves 2003:59) and thus my presentation of these disability devices at such an exaggerated scale could also be read as a subversion of traditional power structures.) The giant sculptures were, from left to right, Left Hand Fork, Universal Knife (Rocking Motion), which was based on my knife, and Right Hand Spoon. The projection showed a close-up of da Vinci’s The Last Supper (c.1495 – 1498) where several hands are caught in the act of gesturing and holding eating utensils.
Central to this presentation was the positive and negative potential that could be derived from the act of holding, and grasping, specialised eating utensils that are designed to augment dysfunctional bodies. Before my stroke I had no idea of the effect that the loss of fine motor skills in my right hand would have on my life, and this deficit is brought to my attention every day at meal time when I cut up my food. As mentioned earlier in this paper, I overcame this problem by employing the use of a ‘Universal Knife (Rocking Motion)’. As I have grown to live with this prosthesis, I have often reflected on my embodiment of this device and the important it plays in maintaining my independence and self-esteem. And yet, accompanying these positive affordances, is also a negative concern that I have experienced with this bodily augmentation – and that is a fear of losing or misplacing the device. This fear has often become a reality when, attending a social dinner, I forget to bring my knife. I recognise that I am so dependant on this prosthesis that without it, I cannot fully participate in this environment. Without my knife, I must get someone to cut up my meal. Without my knife, I truly feel disabled.
The works in *GRASP* were installed in the form of a homage to an object so important that it could be seen to attain a sacred status, yet in this troubled relationship there is always another side. I find it interesting that these types of simple devices, which can have a huge impact in making a dysfunctional body feel ‘normal’, are themselves considered ‘not normal’ or unnatural. Ju Gosling, who claims a cyborg identity through her disability, expands on this point. She says that:

“For some reason, disabled people’s use of aids such as sticks, braces and wheelchairs is regarded as being as fundamentally different in nature to other situations in which we rely on technology to live our lives in the West. The use of cars, bicycles, phones, computers, domestic technology such as vacuum cleaners and washing machines – all these, in contrast, are seen as being entirely natural.” (Gosling, Sept. 2002)

Perhaps these discrepancies are just the case that the general public do not have recourse to interface with prosthetic aids, and therefore, do not come to rely on them and to ‘know them’. I personally find the use of my special knife to be entirely natural and Gosling expresses a similar feeling towards her walking stick. She writes, “when I am tired and watching television, I often find myself wondering how a character is getting up and walking without the use of one…” (Gosling, Sept. 2002).

But still, there also might be another, less welcoming answer to this dilemma. It may be that the use of prosthetic devices does not sit well with what the public generally understands, at this moment in time, it means to be human. That is to say, that bodies using these devices do not “conform fully to their class” (Douglas cited in Wilson 1995:249) and therefore, do not fit the general scheme of things. If this is true, it seems that Stelarc’s dream of the future, where to be human is “to be augmented, extended and enhanced by technology” (Stelarc cited in Zurbrugg, 1999:196) still has a long way to go.
2.6 *(Machine Gun) Walker*

In this section I will address the installation *(Machine Gun) Walker* and, as related in the introduction, this discussion will refer to the work as it was displayed at the Institute of Modern Art gallery in Brisbane.

As I mentioned earlier, I have a troubled history with walking and from that perspective I often find myself observing the gait of others. One social group in particular that I was drawn to for this installation was old men using walking frames. In the beginning I was not sure whether this choice was an act of confronting the inevitability of my own mortality, or whether this focus was designed to simply spotlight the ironies of limitation that permeates these bodies. In the end, I knew it was both.

*(Machine Gun) Walker, (detail), 2004, plywood, dowel, paint 310cm (H) x 224cm (W) x 118cm (D)*
There were two components to this installation. A giant sculpture of a customised Zimmer walker, and a group of thirty two small scale cut out silhouettes of generic walkers types, that is to say; walking frames, walkers with wheels, forearm walkers and walkers with seats etc. These types of devices are in the main associated with the powerless and the weak but this type of recognition is at odds with the standard identification of what it means to be male. Perhaps this situation can be understood through “Foucault’s notion of the body as a functioning machine that records upon its surface the everyday practices of power and discourse” (Markotic, 2003:196). The power and the male identity that once existed has been dissipated through this add on frame. A shift has occurred, and the body that once commanded authority and power has changed to one that has lost the power to command.

I remember my grandfather as an old man; rugged up to beat the cold and pressing a transistor radio to his ear in an attempt to listen to the horse races. At that stage of his decline he mainly existed in his own world, but relatives told me of his heroic ‘adventures’ fighting the Turks in the First World War. I wished to weave a tiny portion of this childhood memory into this installation and this was attempted through the customising of the Zimmer walker.

(Machine Gun) Walker, (detail), 2004, plywood, paint
Dimensions variable - each Walker approx. 40cm (H)
Like all other devices of the genre this customised walker empowers its user and extends their radius of action. But there is something very different about this model for attached to the framework is a representation of an archaic Vickers machine gun. This type of machine gun was selected because it was used by the nation’s troops in the First, Second and Korean Wars. With this walker the male identity is restored and the image of the frail defenceless returned soldier is overturned. Empowered by the use of this walker, ‘old man war comes a shuffling’ in his relentless pursuit of power.

The gallery chosen for this installation was high, long and narrow and the walker sculpture was sited at one end and the cut-out silhouettes were fixed to the wall at the other end. The individual silhouettes were about the size of an A3 piece of paper and when they were grouped together they were arranged in a grid like formation (like a military cemetery). At a vastly different scale to the Lilliputian silhouettes, the walker sculpture stood over three metres tall. Reviewing this exhibition for Artlink magazine, the critic Tim Morrell expressed the relationship between the Lillyputian and Brobdingnagian components in this way.

“As installed at the Institute of Modern Art, the big Machine Gun Walker sculpture faced a wall of tiny cut-outs of various generic designs for walking frames. Apart from being positioned to blow these conventional models away, the super-modified walker seemed even more monstrously big when seen in their company. The viewer was more conscious of being dwarfed by the huge apparatus when made to feel like a giant by the minuscule objects on the wall. Human size was made immaterial by these discrepancies of scale, and the physical body made irrelevant.” (Morrell 2004:94)

When the viewer entered the installation room they had to journey to the other end to address the large work, and as they got nearer to the object the form of the machine gun began to loom above them. In the planning of this installation this was a move of psychological intent, to make the viewer aware
of their own (comparatively) insignificant size and thus forcing them into a fresh way of contemplating the idea of prosthetics.

In Part Three of this paper I will generally discuss the use of painting techniques and colour in my work, however in dealing with this installation I will quickly discuss these aspects now because only in this work was paint and colour used as a tool for psychological intent. In this showing the gallery was dark except for the pools of light that illuminated the sculpture and the grid of silhouettes. These forms were painted in a charcoal hammer finished paint that was designed to give the appearance of metal. The result of this was that the forms looked heavy, and in the case of the sculpture, confronting. As the viewer walked around the sculpture the grid of silhouettes on the far wall would come into view. Their role in this installation was to counter the black humour of the machine gun fitted walker by shifting the viewer back to the reality of these prosthetics, and this formulation can be seen to mirror the two pathways that I am following in this paper, a question of reality and a question of fantasy.

2.7 Bio-Tech Fusions

I will now turn the attention of this exegesis to my second area of studio research - envisaging the prosthesis in the light of bio-tech futurist speculations. Firstly I must explain that my investigation of this concept results in very different work. In exploring this concept I can use my imagination freely because I am not faced with ethical issues of interpretation as in the case of my other line of research. Also, these bio-tech structures aren't based directly on real life objects; they are instead based on imaginative visages of future possibilities.

Beforehand, speaking from the reality of a dysfunctional body, I made a pessimistic reference to Stelarc's dream that the technologically augmented, extended and enhanced body still has a long way to go before any general acceptance of it as truly human. Yet, speaking from the position that I’m taking
now, I optimistically subscribe to his view. My conflicting opinions here are simply symptomatic of my two sides that are uneasily grafted together in my present being.

When I introduced the sculptures of my health care based prosthetics (Section 2.1), I noted that facsimiles of the human body were not represented in my work, rather, the body was indicated through absence. That approach however is not carried through into my second line of inquiry because these works portray technically re-designed life forms that are fusions of the organic and the inorganic, and generally, they can be seen as visual metaphors of a cyborg evolution.

As I have responded to this concept over the period of my doctorate, I firstly staged two solo exhibitions in Brisbane’s SoapBox Gallery, titled CYBER EVOLUTION (2000) and PARASITES (2003). Secondly, I had a work titled Circuit (2003) selected for TEMPERATURE: Contemporary Queensland Sculpture (2004), a major survey exhibition at the Museum of Brisbane. Lastly, I was commissioned to produce a number of Public Artworks: Cyber Ray (2002, 175 Eagle Street, Brisbane) and 21st Century Growth Shoots (2003, Pacific Pines State High School Community Auditorium, Pacific Pines). Because of the space limitations of this paper, I will not discuss each and every work in detail; I will instead place greater emphasis on selected works where points relevant to this critical analysis can be explicated. In this explication I will follow connecting lines of thought rather than chronological order.
2.8 Cyber Evolution

The exhibition titled CYBER EVOLUTION comprised five works, and of these I will briefly discuss: Clawfish, Brood and Industrialisation. My intention for this exhibition was to represent a cyborg evolution in various stages. Therefore it seemed pertinent that I loosely base my designs around two accepted notions of evolution: that of nature and that of culture. Some of the images that I drew upon were shells, fossils, extinct ocean creatures, mechanical jaws, factories and the riveted steel style of construction that was adopted with the coming of the industrial revolution.

It is important to note here that the

Clawfish, 2000, plywood, cane, wood, paint
80cm (H) x 45cm (W) x 10cm (D)

Brood, 2000, plywood, wood, plaster, paint
Dimensions variable – tallest form approx. 120cm (H)
role of the prosthesis in these cyborg representations was not seen as a bodily supplement, but rather, as “an integral part of its organization” (Caygill, 1997:48). The suspended piece Clawfish talked of that type of array, for while the thin, writhing, skeletal form was equipped with jaws and a tail, it also possessed a mechanical looking contrivance that could be likened to a primitive pump.

The work Brood took a different focus and portrayed procreation of the species. The ‘mother’ and its spawn can be seen to evoke an alternate moment when the organic and the inorganic became one. The work Industrialisation is the most complicated of the group, in both fabrication and concept. From the ‘cockpit’ of this Narwhale-like creature, a 19th Century factory spews smoke from grey chimneys. This cyborg is the culmination of the evolutionary pathway travelled so far, but alas, one that appears to lead to a dystopian future. The organic and the machinic are united, but I questioned at what cost. These were the types of notions that were impacting on my thoughts in the first year of my current study. I was intrigued by the concept of evolution through technology, but I was also wary of mankind playing a “God trick” (Sofia, 1993:91).
The next artwork under discussion is the public artwork *Cyber Ray* and this will form the second part of my presentation that will constitute my final doctoral submission. I have placed the discussion of this work directly after that of the *CYBER EVOLUTION* exhibition because I see it is a logical extension of that project. Also, I must say that during the fourteen months that separated these two projects my attitude to evolution through technology transformed and therefore I no longer subscribed to Frankensteinian paranoia.

Generally with public art proposals, the artist must respond to the nature of the site, its history and the surroundings. In this job I was commissioned to produce a large-scale contemporary artwork for a business-centred high rise and in this sense the work was to be a true monument to the ‘power and status’ of the owners. What interested me when I was formulating my concept was the close proximity of the site of the river, and the fact that the building was designed to be the most Internet friendly business-house in the city. Therefore my responses centred on a
gigantic stingray-like cyborg-like form, a physical manifestation of a 21st Century creature born of the river and the Internet, a meld of the organic and the technological. Conceptually I envisaged that the circles and the organic web-like structure inside the creature’s wings would represent the users of the Internet and the World Wide Web itself. In addition, the bronzed object in the centre of the body was designed to reference a processor, and to make note that the computer binary system is at the creature’s heart.

*Cyber Ray* can also be understood as a virtual presence, one that glides through and permeates the corridors, floors, offices and framework of 175 Eagle Street. In this guise, it is a McLuhanesque extension of the office worker’s body-mind. *Cyber Ray* is arguably prosthetic communication incamate.

And yet, to me, perhaps the most important aspect of this sculpture is that it can be understood as a milestone, a monument to the closing “of the mechanical age and the beginning of the virtual age” (Stone, 1995:400). This statement has a double meaning to me. Aside from the concepts already mentioned, the experience of creating a Public Artwork opened a doorway for me into the possibilities presented by computer aided drawing and laser cutting.

Beforehand, in exhibitions like *CYBER EVOLUTION*, all the components were laboriously drawn by hand, and then cut out with the aid of power tools. But after working on this *Cyber Ray* suddenly my power tools seemed so inaccurate and old fashioned. I will discuss this transition in my work practice in more detail in Part Three of this paper.
2.10 Parasites

I will ever so briefly turn the attention of the exegesis to my exhibition titled *PARASITES*. The crux of this show was fear, my fear that toxoplasmosis would return and claim the sight of my good eye. In my attempts to visualise this parasite I wanted my representations to have a simple mechanical appearance, for it seemed appropriate that my cyborg identity be preyed upon by a cyborg parasite.

As the concept evolved I thought about how, when I squint my eyes and look into sunlight, it is as though I am able to glimpse fleeting ethereal forms travelling across my field of vision. Even though I know that these spectres are simply particles of unformed organic matter floating in the gel of the eyes, I sometimes fantasised that these shapes may be the harbingers of the return of toxoplasmosis. As I constructed the linear suspended forms, it seemed that the works had been spawned from my vision of these potential omens, my own personal bio-tech parasites.

The reason I introduced this work at this point of my exegesis is to establish its context in relation to my other works, for these self-referential works were very simple, almost naive in their construction. I found the most exciting aspect of this exhibition was the freedom of the making process that I attained and I will discuss this issue in Part Three of this paper.
I now wish to consider the notion of symbiosis in the make-up of a bio-tech entity. In a common dictionary a definition of symbiosis would centre on “two different organisms living in a close physical association, usu. to the advantage of both…” (Allen, 1990 :1235), *Circuit* is a response to this type of existence.

The two dominant images that are juxtaposed in this suspended multi-layered double-sided relief are based on a computer circuit board and a human neural network, two diminutive structures that are both involved in the transmitting of information through the use of electronic charges. However there is something drastically amiss with how these structures are usually understood for visually it appears that neurones and circuit board have grown monstrously gigantic and fused together, with the neurones positioned on each side and passing through the very physical structure of the circuit board itself.

Psychologically, I attempted to make this object confronting and slightly threatening, and crucial to my approach here was the distortion of scale and form of known objects, of making the familiar ‘unfamiliar’.

2.11 *Circuit*
When I was conceptualising this work, I was very much influenced by Howard Caygill’s description of a Stelarc performance. In it he talked about the antagonistic and opposing relationship between a technological prosthesis and the body, and yet, he noted that these dualities still advanced “towards an awkward harmony” (Caygill, 1997:48). In this future-body, the presence of the neurones on the circuit board does seem awkward, perhaps even threatening, but nevertheless this arrangement does seem to be working productively “that is, neither only negatively nor only positively” as it operates in “both enabling and constraining ways” (Woodward, 2000:167).

In Figueroa-Sarriera’s analysis of Hans Moravec’s *MIND Children: The Future of Robot and Human Intelligence* she argues that Moravec “characterizes the human/machine relationship with the metaphor of symbiosis” (Figueroa-Sarriera, 1995:129). In addition, she also argues that in this text this cooperative relationship can be understood as “one between two entities conceived of as organisms” (Figueroa-Sarriera, 1995:129).

In my conceptualisation of *Circuit* I also see this relationship between these dualities as one of symbiosis. But still, I wish to question this concept further. Stelarc argues that a re-designing of the human body will lead to a change in what it means to be human. I am arguing that Circuit is a provocation that looks into the future, and argues that through the reproduction of this ‘symbiotic life form’ the term ‘life’ would be required to be redefined.

**2.12 21st Century Growth Shoots**

Like *Circuit*, the two public artworks titled *21st Century Growth Shoots* were also of giant proportions and also enquired into a bio-tech evolution, but unlike the previous work the feeling emitting from these flowing forms was one of tranquillity. My concept here was largely influenced by two observations. Firstly, Pacific Pines – the site for *21st Century Growth Shoots* – is so named because a commercial pine tree plantation was once located there. Secondly, the suburb is new, with the high school being opened in 2000, and the high
school/community auditorium where the artwork is sited was only opened last year.

My response to these ideas was the concept of seedlings sprouting and unfurling, metaphors for a suburb at its infancy. In addition, I also wanted to speak of the world that these students would inherit, a world where technoscientific intervention will have evolutionary implications. Therefore when I built the two sculptures they were branded with the marks of a cyborg existence in the form of flowing metal prostheses fitted to their spines. Yet significantly, I made a particular point here to not make these prosthetics to appear as if they had a medical-instrumental role.

In ‘The extra ear’ (Artlink, March 2002:9) Stelarc expressed the way he relates to prosthetics in his work as not “as a sign of lack, but as a symptom of excess. Rather than replacing a missing or malfunctioning part of the body”, these devices “augment or amplify the body’s form and function” (Stelarc,
2002:9). In a way that resonates with Stelarc’s position, a willingness to accept technological augmentation is the core concept behind *21st Century Growth Shoots*. Be it in the form of these sculptures, or in the lives of the young students that they are designed for, these works speak of an evolving future of cyborg identity.

2.13 Marker

Before I finish Part Two of this paper, I wish to quickly make a note about the public artwork *Marker* that I produced for the Workshops Rail Museum in Ipswich. I must acknowledge that I experienced a problem faced by many Public Artists, that because of the necessity to meet the client’s brief I cannot justly claim that these works enquired into the concept of the bodily prosthetics. In saying this, I do not mean to underrate these works in terms of their impact on this studio practice, quite the contrary really. After *Cyber Ray* where I worked with a team, this project was the first public artwork that I managed by myself. The lessons that I learned in dealing with industry and the techniques and processes that I became conversant with have had a huge impact on my working processes. I shall investigate these issues more in Part Three.

*Marker*, 2002, stainless steel
Dimensions variable – approx. 300cm (H)
3.0 PART THREE: Transitions

3.1 An evolving practice

As explained in the introduction, this section of the exegesis explores the transitions in my practice throughout the course of my candidature. Some of these transitions relate to changes in my working approach, my use of colour and texture, my learning of new computer-mediated techniques and having access to industrial processes. These issues, and how I see them impacting on my practice, will be highlighted in this section.

In Section 2.9, I made note that in exhibitions like CYBER EVOLUTION and those before it, all the components of the sculptures were laboriously drawn by hand and then cut out with the aid of power tools. In addition, I also explained that after being privy to how industry approached the fabrication of Cyber Ray and the wonders of Computer Aided Design (CAD) and laser cutting, I saw my method to be somewhat inaccurate and archaic. I now wish to turn my attention to this insight and to discuss the evolution of my construction processes in more detail.

I will start this discussion by explaining that because I have had to develop specialised making techniques to compensate for my physical impairments my sculpture has an idiosyncratic ‘look’. I stated in Section 1.9 that one of the major reasons why I favour the use of lightweight wooden skeletal like structures in my work was because of being influenced by boyhood memories, I now wish to disclose that the prime reason I resorted to this technique is that I cannot use a hammer and a nail: I can hold a hammer, but it seems that there are not many brave fools who will hold a nail still while I swing at it! So, in my attempts to build ‘in the round’ sculptures that had form and volume, I drew on my boyhood knowledge of how bi-planes were made, that being, a series of wooden ribs connected by thin wooden spars.
When this method was translated into the CYBER EVOLUTION works, it made its appearance in the form of plywood ribs and flexible cane spars. The method I used here was to draw each rib with a pencil, ruler and compass. This was either straight onto the plywood, or in the case of multiples, onto A4 paper so it could be photocopied and affixed to the ply. Next the holes for the cane spars were drilled and interior voids cut out with a jigsaw, and after that, the individual ribs shapes were cut from the sheet via a bandsaw.

Regarding these shapes, it was important in to me that these machine-like components should also possess an organic feeling. This was achieved by excessively rounding all the corners of the ribs. Unfortunately, I could not hold ribs whilst I worked on them with a grinding tool, so I had to attach them to my bench with a one handed clamp. Consequently, as I worked on different areas I had to un-clamp, move the work and re-clamp. This was a very tedious process, and even today, I have not found a better way to go about it.

Another problem was that my drawing, cutting and drilling skills were not entirely accurate, and this became very noticeable when I began to learn the process of plywood lamination. When I attempted to form the complex curved wings of the Industrialisation sculpture, the discrepancies in the layers threw everything out of plumb and the only recourse available was to make the layers oversized and then dramatically trim them when the laminating was complete.

3.2 Colour

After the processing was completed, the sculptures were assembled and the components locked in position with various glues, and in the final stage, the forms were painted. At this stage of my career, my painting techniques had been evolving for many years. One sculptor whose use of colour had been
influential on my work was Anish Kapoor, as I admired his minimal forms covered with intense pure pigments.

Some of my early-suspended works (not mentioned here) were covered with a flat, intense, monochromatically coloured paint. I felt that this stark colouring applied to these floating like forms gave them a surreal strength. By the time of my CYBER EVOLUTION show, I still in the main used flat monochromatic colours, but I was also painting exaggerated highlights and shadows onto the forms to make them appear to possess more depth. I judged this technique to work well with the lighting used, with each sculpture being spot lit and casting its shadow onto a nearby wall.

3.3 Protect the male ego

After the completion of the CYBER EVOLUTION exhibition, when I had time to reflect on its successes and failures, my main concern was the length of time required to complete the production of the sculptures. As a timesaving strategy my studio supervisor suggested that I source found objects and work around these. However, I rejected this approach because recognisable found objects did not seem to fit with the aesthetics of my work.
In hindsight, I now recognise that I rejected this advice because it cut to deeply into my male pride; I feared that such an act could crack the fortified wall of my masculinity. Ever since the formative years spent in my father’s workshop, I had taken pride in my abilities to make objects and to make skilfully. Furthermore, when I began to make sculptures again after my stroke, I was relieved that with appropriate strategies I could still produce work up to the standard that I had set myself, and thus, I could still feel complete as a man. Hence, at this stage it appeared that while my making abilities were intact, I was hobbled by the psychological baggage that travelled with my impairment.

3.4 From hand drawing design to computer generated design

My next exhibition was GRASP, and I wish to discuss problems encountered in its production and how I began to experiment with computer generated drawing.

The first sculpture produced for this exhibition was Universal Knife (Rocking Motion). Because of the large size of this piece, I found the best means of drawing a template for the central structure was to use an overhead projector and project the required drawing onto plywood, and then trace it. The template was then cut out and used to produce two more, and after that, the layers were then laminated together. However, as in the production of the previous works, I faced the situation that because of the inaccuracies involved in producing each layer, I had to waste precious time machining the laminated block until the problem was rectified.

When I came to fabricate the ribs I faced another problem in accurately drilling the holes to take the cane spars. When the ribs were laid out onto the central structure all the holes had to be exactly in line, otherwise the cane noticeably kinked. The only answer to this dilemma was to make double the amount needed and then select the best. Luckily, the ribs were all of the same design and I had to only to produce one pattern. This however, was not the case in the other two sculptures.
In the handles of the *Left Hand Fork* and *Right Hand Spoon*, the dimensions of the ribs progressively expand from one end to the other. I was resigned to drawing this complicated progression by hand until another doctoral student told me about Adobe Illustrator’s™ blend tool, which creates shape and colour blends between objects. This is primarily a 2D illustration program, but its potential in speeding up drawing of my components became obvious as I began to learn the program. Using this approach it was possible to draw the first rib and the last rib and then have Adobe Illustrator™ calculate and draw the remainder. There were annoying limitations with this program in terms that it was impossible to extract a single rib from the blend in order to modify it or to print it by itself. Nevertheless, I soon recognised this software to be a boon in the way I approached the layout of my sculpture.
3.5 Faux metal and texture

The painting and texturing of the GRASP sculptures considerably deviated from preceding works. Instead of stark colours, these new works had a faux oxidised bronze finish applied in an attempt to suggest that they possessed age-old origins. The handles of these utensils were heavily textured with grinding tools, partially to suggest the easy gripping surface often found on these specialised tools, but also as a compositional aid in playing against the smoothness of the faux ‘metal’. In the previous exhibition, texture was little used except as a contrasting element in the wings of Industrialisation. But after reflecting on its successful use in these works, I planned to place more of an emphasis on it in future use.

3.6 Auto CAD™(dxf)

After the GRASP show the next sculpture that I worked on was Cyber Ray. As previously indicated, the knowledge that I gained from this endeavour has impacted heavily on my working approach. Of particular interest to me was how my concept drawings were taken by the fabricator (Urban Art Projects) and redrawn in Auto CAD™(dxf), the software format needed for the laser cutter. I found this translation to be quite complicated, and the software used to be quite esoteric. Although I wished to use a similar approach in my own work, I could not see an easy way of getting past the in depth training that would be necessary to learn Auto CAD™ (dxf) and the exorbitant costs involved, (the cutting of the metal alone in this job cost $7000). It appeared to me that the only way to access this process was to win an arts grant or another public art commission and then hire a CAD draftsperson to redraw my designs.
3.7 Having to stand back

After the fabricator finished constructing the sculpture the approach to finishing this work followed a plan of contrasting smoothness and texture, painted and unpainted. The metallic looking oval processor was addressed first. Originally this element was to be cast in bronze, but this proved to be too expensive. So in my compromise I designed it to be made of several layers of laser cut MDF. After these sections were assembled they were machined to my specifications. Because I had recent experience in the use of faux bronze paint finishes, I was ‘allowed’ to paint this piece. This was my only ‘hands on’ interaction with the sculpture. The finish of the rest of the work was straightforward. Firstly, the aluminium was scored with a grinder and then polished, and after that, the surface was sealed to prevent oxidation.

![Cyber Ray (detail), 2002](image)

Out of everything that I experienced in this project, perhaps the most significant was having to stand back and to allow others to make my work. It’s strange, but when I fully accepted this situation I realised that I don’t have to
‘prove’ that I can make everything in my work. This recognition greatly influenced my PARASITES sculptures and I will address that issue later in this paper.

3.8 Marker and a great discovery

Chronologically after Cyber Ray my next project was Marker - the public art commission for the Ipswich Rail Museum. As I indicated at the end of Part Two, the significance of this sculpture to my research stemmed chiefly from the fabrication procedures and techniques that I learned. Primary amongst these was further insight into CAD. When this project was initiated my understanding of the drawing tools in Adobe Illustrator™ had been bolstered through continuous experimentation. My developed concept drawings were produced in this format and I became very excited when the fabricator (Stoddart Metal Fabricators) informed me that it might be possible to export my Illustrator™ files straight into Auto CAD™ (dxf) files. What I had not been aware of beforehand was the great variety of programs and systems that engineering firms, industrial fabricators and laser cutters use. What might be impossible with one firm might be possible with another. However my
excitement was short lived. The fabricator’s software could not import my files and so my complicated drawings had to be redrawn by a CAD draftsperson. But still, I was aware now that it might not be a complicated task to get materials laser cut from Illustrator™ drawings if I found the right cutting firm. This was a great discovery.

Other significant processes that I learned from this project were many and varied. Firstly it was enlightening to see how heavy industry approached the cutting, milling, rolling and welding of 10mm stainless steel plate. Then once the body was assembled, other sections were added. These included a photographic image laser-etched onto stainless steel, and hundreds of individually stamped and numbered discs. When the sculpture was finished and polished, the 1100 kilo monument was transported to Ipswich in a specially made cradle. The fabricators then installed it and then in a final act, an assistant and myself glued hundreds of discs around the sculpture.

3.9 Maturation of approach and techniques

In my next public art commission I produced the two sculptures that are collectively known as 21st Century Growth Shoots. This undertaking proved to be the most formative of all the work that I had produced to this stage. As I worked through the necessary stages, my awareness of the approach matured and techniques and processes became fully understood for the first time.

Also, the making of these public artworks differed from those before in that they were not sub-contracted. Although the sculptures were quite large, the biggest being over four metres long, they were chiefly made of laminated plywood and I was confident in my knowledge of that process, and my studio is well set up to handle this type of work (although it became very squeezy as the forms were assembled!).
The designs for the sculptures were prepared in Adobe Illustrator™. This was complicated as there were several differing plywood layers in each sculpture that had to fit perfectly together. This was further compounded by the unavailability of plywood of the required size, which meant that each layer had to be made up of a number of pieces that finger-slotted together. As a way of guarding against misalignment whilst sections were glued together, I designed a system where wooden pins fitted into receiving holes in the plywood and thus, stopped the components from moving.

Like the previous work, there were again problems with the laser cutting. The firm I was using (Advanced Cutting Service) could not successfully open my file, but they recommended a professional file converter to address the problem. This solution worked and the job was able to be cut. When it came time to laminate the plywood, I was ecstatic that all the pieces fitted together perfectly. Seeing this, I could
confidently declare that, with the aid of information technology, my ability to cut complicated components from plywood had undergone a quantum leap, and that in terms of production speed and accuracy, my abilities had now been equalised with that of the ‘normal’ body.

3.10 The finishing of the forms

When it came time to finish the works, I took note of both the unpainted surfaces of the previous public art commissions and the way that I had handled texture in the GRASP works. After the laminating had been completed, the forms were made to look more organic by dramatically rounding the surfaces with grinding tools. The plywood was then heavily scored with an angle grinder, a time consuming act that was then followed by the surfaces being covered with a burnt umber acrylic paint. Next, the sculptures were heavily sanded to just leaving paint residing in all the score marks. This process seemed to take forever, but I judged the result to be worth it. Then to protect the plywood, the forms were covered with a clear matt varnish.

In addressing the finish, the aluminium ‘backbones’ were smoothed with a belt sander and then sealed with a specialist varnish. These bright smooth forms were then screwed to the sculptures, where they favourably contrasted against the textured, partially painted 21st Century Growth Shoots (detail) construction, 2003.
plywood. I must say that after the completion these works, I could see a whole range of possibilities opening up for future exploration.

3.11 Only minor players but…

The next works that I produced were my Parasites sculptures and although I view these artworks as only being minor players in the overall scope of my doctoral inquiry the approach used to construct them is of interest. These linear assemblages were made from wooden craft objects and in the ‘normal’ world of contemporary sculpture this use of found objects would not raise an eyebrow. However because of the ‘baggage’ (Section 3.3) that I had carried around with me for many years, the acceptance of these materials and processes was quite a significant transition and I believe this step will have ramifications in future work.
Up to this stage of my research project the size of my sculptures had been getting bigger and bigger and the small scale of these new works could possibly be seen as a return to earlier times. However this would not be correct as there were significant departures from my usual practice in terms of the absence of colour and texture in the work, and most significantly, of 3-dimensionality.

When the works were exhibited they were suspended not far out from the end wall of a small intimate room, and the important issue here was that I had conceived of and approached the linear forms as a cross between relief sculpture and drawings in space. That is to say, forms like reliefs that in the main only occupy a narrow vertical plane but also had been freed from their placement on the wall. I had been reflecting on the similarities between relief sculpture and drawing for quite a while and this issue had been brought back into recent focus by the intricate drawings - that in the end had been cut out and made real - in the 21st Century Growth Shoots reliefs. In the overall scheme these small works were just preliminary experiments, with this
understanding and this notion followed up in Circuit, which I approached as a double-sided relief/drawing floating in space.

3.12 Complexity

When I reflected on what I had learnt from the making of 21st Century Growth Shoots, I was curious as to what degree of complexity could be attained from the laser cutting and laminating process. Therefore as I began working on the drawings for the Circuit sculpture, the intricacy of the design was prominent in my thoughts. Also as the project got under way it became urgent that I locate a laser cutting business whose system was friendly to mine. After much searching, I found a suitable firm (Laws Laser) who can easily import my Illustrator™ files into the required cutting program and who are also quite reasonable in their cutting fee.

I will not spend time in describing the building process used in this work because it was basically the same as that used in Circuit (detail) construction, 2003
21st Century Growth Shoots where a number of differing levels were machined, laminated together, and shaped and textured again with a variety of grinding tools. However regarding the question that I had set out to answer, I foolishly found the complexity of this process was virtually unlimited. I say foolishly because what I did not consider at any point of the planning stage was that the more information the layers contained, the more time one would have to spend in machining these elements!

When it came time to finish Circuit, there were developments on the time consuming texturing and finishing approach used in prior public artwork. Again a dark paint was isolated in the groove marks that covered the sculpture’s surfaces, however this time this was also followed by the central layer being deeply stained by repeated coatings of a ‘deep blood red’ tinted matt varnish. It was my intention to use this colour simply because I wanted to contrast the circuit board layer against the frame and neurone layers which had been stained and sanded in parts with a maple tinted and a clear matt varnish. This is how I rationalised this approach, but in the back of my mind I also wonder if my having an infected molar removed in the same week as I was applying the varnishes influenced this decision?

3.13 The planning of the final sculpture

I will now conclude Part Three of the paper by addressing points of interest regarding the design and the drafting processes used in the making of the (Machine Gun) Walker installation. As I stated in Section 2.6, this show comprises two elements installed together: a giant skeletal sculpture and a large group of (walker) silhouettes. However because the silhouettes were cut from one piece of plywood I deem them not to be that important for this particular discussion and therefore will turn my attention to the much more complicated sculpture.

I must start off by saying that the engineering of this sculpture, which had to be able to be broken down for transportation and the passing through
doorways, caused me weeks of insomnia and restless nights. As I worked on the design I had to continuously think of how one section would interlock with the next, and so on and so on. In my design I put my faith in the central plywood layer which formed the backbone of the major sections. In areas where I thought the greatest structural strength was needed I planned to laminate pre-cut plywood sections onto the surface and then machine them to shape later on. In less stressed areas, I planned to build up the curved shape by employing a ribs and stringers approach. I had stayed away from this method for quite some time because of the problems I had experienced before in the CYBER EVOLUTION and GRASP shows. However, owing to my growing confidence in the use Illustrator™ and laser cutting I had re-thought the viability of that earlier process.

In my design I was also greatly concerned with how strong and how heavy the work would be, and whether the joining assemblies that I designed to unite the major components would crack under pressure. To respond to the weight and strength problem, I drew upon the structure of aircraft and designed the forms to be ‘full of holes’ sited in strategic intervals. From my experiences of fabricating the 21st Century Growth Shoots and the Circuit sculptures, I was able to ‘guesstimate’ the weight...
of the finished work to be somewhere between 35 and 45 kilos. I knew that was a lot to ask of this plywood structure, but after several weeks I was reasonably confident that the major problems had been worked out.

When it came time to produce the finished drawings for the laser cutter I was astounded by the sheer number of profiles required. In the end, the parts list contained 98 different schematic drawings: with some being very simple and some being quite complicated, some requiring one copy to be produced and some requiring dozens of hundreds to be cut.

It seems like an eternity ago that I took the first step on this research journey and to my mind nothing indicates the enormous growth in my understanding of techniques and processes over this duration quite like the way that I approached the planning of the (Machine Gun) Walker. Through the learning of new knowledge, my approach to the making of art has evolved into something that I did not expect at the beginning of this project. In the next part of this paper I will examine the meanings of the transitions that my practical and theoretical work has passed through and discuss the implications for my future work.
4.0 PART FOUR: Resolutions and transformations

4.1 Prosthetic and cyborg identity revisited

In section 1.4 I noted my self-identification as that of a second rate cyborg, ‘a cyborg from wrong side of the tracks’. This raised a series of important questions that would need to be addressed. These were: what did I mean by this ‘second rate’ expression; how did I come to this comprehension, how did I understand the relationship between the cyborg and the prosthesis, and lastly, how has my art been influenced by this figuration?

Over the course of this research project I thought about these questions a great deal. What has surprised me was how my understanding of the questions and my responses to them ‘moved and slipped’ as I became aware of extra information or different interpretations. Viewed from the perspective of my particular lens, the phenomenon of the prosthesis and the notion of ‘the body’ are revealed to be much more complex and subjective than I had originally imagined. This is particularly so when ‘that body’ is understood as cyborgian. For me, the terms ‘prosthesis’ and ‘cyborg’, whilst increasingly familiar in cultural discourses, are not hollow in meaning, but remain valuable in terms of their usefulness in expressing notions of selfhood in a high-tech culture.

In my case I wilfully claim to be a second rate cyborg, yet I do not think of this identification as being derogatory. To me it is an ideal site to occupy for my present purposes. Viewed through my lens, I am a poor version of my childhood heroes. I know that I will never be a true cyborg like Steve Austin, and I pray that I will never be an archetypical cyborg like ‘Tin Legs’ Badder. Unlike my boyhood heroes, my afflictions are not unique, nor did they result from acts of bravery. I am simply a poor relation who is ‘enabled and empowered’ through the use of prosthetic objects. Perhaps in some ways I could be seen to be an example of a bio-tech future at its most basic. Siting
my self along the continuum of cyborg identities, (refer to section 1.7), I can categorise myself as less of a cyborg than X, but more of a cyborg than Y. Of course this sort of recognition is subjective and reliant on self-awareness, but I argue that is the only way to comprehend this individualistic issue.

As I have reflected on this issue of cyborg awareness, I have realised that self-awareness can play a crucial role in how one may understand prosthetic technologies in the 21st Century. Earlier in section 1.6 I said that before my stroke I only knew computer keyboards and cutlery as faceless tools, but after I understood their impact on my life they attained an aura of importance. This sort of knowing was also expressed in Sandy Stone’s *Split Subjects, Not Atoms; or, How I Fell in Love with My Prosthesis*. In this provocation Stone expressed her love of her prosthesis, that being, communication technology. Stone was aware that this technology could be understood as ‘an extension of will, of instrumentality’ (Stone, 1995:394). In her self-analysis she knew this technology was of major importance in her life, and thus, this recognition became the subject of her discourse. My focus is different to Stone’s, but I argue that we have both have adopted a ‘personal prosthetics’ view of enabling technologies, and this view is influential in the way we live our lives and practice art.

4.2 Prosthetic Subjectivity

In examining the concept of ‘personal prosthetics’ further, I wish to put this notion into context, and relay how I came to new understandings about subjectivity through my doctoral inquiry.

At the beginning of this project I held the conviction that the only prosthetic devices that I owned were my ‘Maltron’ keyboard and my special knife. This belief was founded on the recognition that these devices were specially made health-care based aids that played primary roles in equalising the abilities of my dysfunctional body with that of the so-called ‘normal body’. 
When I became more knowledgeable about the laser cutting process I questioned if this technology could be seen as a prosthetic for me in the sense that through its use my ability to design and plan my sculptures, and to have shapes cut out of ply, was no different to that of a normal body using the same process. After some deliberation, I came to the conclusion that the laser cutting process was just that, a process comprised of myself, my keyboard, the computer, software and an industrial machine operated by others. My reasoning here was that there was an important element missing from all but the keyboard, and that was the interface of touch. In having only one dependable hand I have become very aware that the interface between my body and the world chiefly resides in the fingertips of my left hand. Using that criteria I judged that the only prosthesis involved in this process was my ‘Maltron’ keyboard, for through my fingers touching its keys, were funnelled my thoughts, plans and desires.

However I now know that this categorisation was limited. What I had not paid enough attention to was the fact that my keyboard was linked to the computer. Although the keyboard supplied a physical interface that was supportive of my impairment, it was really the enabling power of the computer that acted as a ‘cognitive amplifier’ for my thoughts, plans and desires, that constituted a transitional phase in my practice as a sculptor. Therefore, in regard to my use of a computer and the laser cutting process, I now realise that my ‘personal prosthesis’ is, more extensively, the keyboard / computer / software amalgamation. This is how I have come to understand the more complex prosthetic extension afforded by my ‘Maltron’ keyboard, a technology that previously I only thought of in
terms of its customisation to compensate for my one-handedness. Furthermore, I could see that the ‘lens’ that I had focussed on my practice as a sculptor had been somewhat clouded by my (masculinist) egotistical desire to retain a hand-crafted aesthetic despite the obvious impracticality of the methods associated with this aesthetic. By personalising my investigation into prosthetics, I could see how my compensatory approach - having to prove that I could still produce work equivalent to that of my two-handed days – had limited my artistic vision.

Returning to the notion of how one may adopt ‘personal prosthetics’ through self-awareness of enabling technologies, I posit that this term is useful for both my understanding of my bodily situation, but also how others might know their relationship with technology in the 21st Century. ‘Personal prosthetics’ could be understood to signify a technology that the user ‘knows’ as direct extensions of their will and their subjectivity and as being quintessential to the way they live their life. In this recognition there must be an element that sets these technologies apart from all others, but it also must be remembered this technology can be low-tech or hi-tech, simple or complex, natural (generic technology) or unnatural (disability aids). In the end it is only self-awareness that can elevate these technologies to the level of a ‘personal prosthesis’.
4.3 Bio-Tech-Knowing

One of the questions that I felt that I had to address in this exegesis was how did I understand the relationship between the cyborg and the prosthesis. In my case, I have always felt that I embodied my special devices and that one is a physical extension of the other (body-machine). But now, after realizing that one of my ‘personal prosthesis’ is my keyboard/computer/software unit, I have had to rethink this.

I now believe that there is a symbiotic element to my relationship with this amalgamation, which can be seen to have found its expression in Cyber Ray and Circuit. This relationship is explored effectively by theorist Deborah Lupton, who suggests the relationship between the computer and its user is one where “users invest certain aspects of themselves and their culture when ‘making sense’ of their computers, and their use of computers may be viewed as contributing to the individual’s images of their selves and their bodies” (Lupton, 1995:99). A ‘personal prosthetics’ approach engages with what Lupton identifies as “issues of the emotional and embodied relationship that computer users have with their personal computers” for “the relationship we have with our PCs has characteristics that set it apart from the many other technologies we use” (Lupton, 1995:98).

Thus, as I indicated in the beginning of this section, the relationship between the cyborg and the prosthesis is more complex and more open to subjective interpretation that I originally thought. Beyond my ‘Maltron’ keyboard lies a greater complexity of computer-mediated thought and action. As the human organism, coupled with the computer, I am actually engaging the information or ‘telematic’ mode to ‘remotely’ craft artworks through a symbiotic network of neural and silicon circuitry and the process of feedback-loops between humans and machines.
4.4 Recon-figurations

The final question to be addressed is that of the influence of the cyborg configuration on my practice. Before this project I was of the understanding that the impact of my impairments on my practice could be recognised as a disabling factor that with the right strategies could be circumvented. However now, this comprehension has transitioned into one that sees cyborg subjectivity as empowering in that it has provided me with an alternate view and path to follow, and has become a primary factor that has resulted in a new aesthetic in my work.

Additional transitions that I wish to connect to this stance are the growth in my vocabulary, that is, what my work can speak of. In my *IRONHAND* and *CUSTOMISED* exhibitions my work spoke of enablement and irony, of whimsy and the subjective knowing that a user may have with their prosthesis. However after a shift in subject positioning, when I became aware that I could identify with being both patriarchy and ‘other’, (and that through my masculinist aesthetic that this ‘other’ could speak), it seemed that the discourse of power was un-locked. In *(Machine Gun)* Walker, this focus made its appearance in its speaking of issues of power and dis-powerment, and in the future I plan to pursue this paradox further.

Now I wish to discuss the impact on my practice of its extension into the public domain, and the relationship between this extension and cyborgian identification. When I started my doctoral project I did not anticipate a shift in my practice to encompass public art projects. My selection to submit a concept proposal (on my first public art commission) came ‘out of the blue’ and after the successful conclusion of that job, I rethought my practice and included public art in my doctoral inquiry.

For the last year I have planned that the assessor would be presented with two major works that could typify the two tangents of my work and the two audiences of my work. However lately I have become aware that what I thought of as distinct categories of my work seems to be blending and morphing.
I first became aware of the dissolving boundaries between these private and public works when I recently reflected on three of the works that I made in the last year. In section 3.9 I indicated that the 21st Century Growth Shoots stood as a landmark in my research because the understanding of how the approaches, techniques and processes worked and interrelated together became clear to me for the first time. Yet when I compared this public work to Circuit and (Machine Gun) Walker, which were exhibited in the Museum of Brisbane and the Institute of Modern art respectively, I momentarily thought that I had surpassed that previous watershed because these latest works were not designed to meet a client’s brief, instead they were purely made to satisfy my own agenda. That is, these works were made to exist as artworks in their own right and also to respond to my research focus. However on thinking deeper, I realised that two out of my three public art commissions also contributed to the knowledge gained through this doctoral inquiry.

I have spoken to a number of other artists who do ‘their work’ and ‘public art work’ and see these practices as quite separate, with the public art being situated lower (somehow less pure) than their personal art. After pondering on this situation I do not subscribe to their view because, in a similar way to other times mentioned in this paper, I now see my practice as spanning this divide.

With hindsight now, I can see the inter-connectedness of the concepts that have been the focus of my inquiry. Knowledges gained from posing these questions in both the private and public contexts have resulted in the most formative changes in my practice. I now find it harder and harder to separate these two supposed factions. It is increasingly the case that what an artist considers to be personal or private work, once exhibited in an institutional context, can find its way permanently into public space. For example, Circuit has recently been acquired by Griffith University as a public artwork. It will be sited in a soon-to-be built Science and Physiotherapy building and as is increasingly the case with public art projects, I will work with architects to design a suitable space for displaying the artwork. Surprisingly, (Machine Gun) Walker might also make this transition, as it has been proposed by
Artworkers Alliance’s art-for-hire scheme that this work be displayed in the Comalco Place Building in the city (an emblem of commercial power). I believe that this sort of flux is indicative of the way that I now understand my practice as being positioned on the cusp of private and public art.

And now, at the conclusion of this journey, my study has revealed as much about myself as about my work. My focus on, and interrogation of the phenomena of the prosthesis and the mythical figure of the cyborg from the perspective of the lived reality of impairment and dependency upon compensatory prosthetics has proved transformatory on many levels.

The primary outcome is a more evolved symbolic language through which I may contribute to the critical discourses on our bio-tech evolutionary future. My work has grown in scale and begun to occupy public places, where it can speak to new and more extensive audiences. This is significant because it is through artistic engagement in these discourses and contexts that the ethic and aesthetic can intersect to further the important debate about the human use of technology in the world.

In concluding, it is important to acknowledge the limitations of the study, and to gesture toward the future.

4.5 Limitations of study

Ultimately, thinking beyond the keyboard, has, as Stone and Figueroa-Sarriera have proposed, extended my radius of action instrumentality in the ways already mentioned. There remain many important questions to be addressed.
Fox example, throughout this project I have exclusively used my ‘Maltron’ keyboard, and I ponder how the use of different interfaces to couple with the computer could have affected the findings of my research. For example, if I had used a spoken or wireless interface, would I have felt more God-like or more removed from the feedback loops that were occurring? Or, if I had used a haptic interface like a data glove, would the way that I understand my relationship with the computer to seem more natural, or contrary, more borg-like. As theory informs my practice and my practice informs my theory, I ponder with what sort of language would I have used to speak of these prosthesis/body couplings.

As technology advances and the cyborg body evolves, artists like Stelarc are important as they can raise peoples’ consciousness of the possibilities of the future body. However, along with Stelarc’s prophecies, there also must be a questioning of how bio-technological advances will address technology and the real needs of people living with impaired bodies. Whilst my study has been a personal analysis of this phenomenon from the viewpoint of an artist, and from this discipline, this work can be taken much further. For example by studies enquiring into how artists with impairments might have agency in achieving and working at the level of their ‘able-bodied’ peers.

4.6 The future

Already I have begun to imagine a future where I am wearing a haptic data glove, modelling in space, and extending my will onto a CNC router as I ‘hand finish’ a sculpture. Perhaps this vision still has a way to travel, but nevertheless, it could be a very real possibility given the insights I’ve gained thus far, and institutional support for access to these technologies by artists – for example, through the facilitation of transdisciplinary contexts and activities where artists might work alongside neuroscientists, bio-technologists and computer scientists to push these new technologies in unexpected ways.
This suggestion has implications for my own future directions. Venturing ‘across the tracks’ to this somehow ‘more authentic’ enhanced cyborgian status may constitute the fulfilment of those boyhood fantasies. A possible pathway to the achievement of this goal is to maintain my practice on the cusp of private and public art, for I know that this type of technology is expensive and that public art projects may provide the means to undertake this type of venture.
APPENDIX 1: ‘(Machine Gun) Walker’ Exhibition catalogue essay, Pat Hoffie, 2004

1. A Footnote Before

A few weeks before the opening of this exhibition, on Monday March 22nd, the world was greeted by the news that Sheikh Ahmed Yassin, the founder of Hamas, had been killed by laser guided missiles launched by an Israeli Cobra attack helicopter.

His passing could have been remembered as yet another statistic in the ongoing onslaught where battles for territory, terrorism and international events merge and bleed their way into our domestic lives within the guise of daily news.

Except that in the graphic depiction of this event, the image of the aftermath of the bomb-blast that killed the spiritual leader revered by so many Palestinians evoked a particular poignancy. Surrounded by the charred rubble, the remains of Sheikh Yassin’s broken wheel chair stood like a toppled icon of the way in which infirmity and age are associated with the powerless. Increasingly, these days, decisions about changes to world power are held in the hands of old men. Maybe this has always been the case.

2. Walker. The installation

In this installation the frame of an immense Zimmer walker – the kind associated with the infirm, the disabled or the aged - is suspended between the gallery ceiling and the floor. But there is something different about this mechanical aid – something monstrous that amounts to more than the escalation of its proportions. For its frame has been customised to fit a particular need. This walker extends the radius of action required by most such instruments. Onto the skeletal frame of this walker has been welded an archaic Vickers machine gun – the kind used by the nation’s troops in not only the First and Second World Wars but also the Korean War.

Around the central walker, dozens of small plywood silhouettes of a range of other walkers have been assembled - walkers with wheels, forearm walkers, walkers with seats and more ‘ordinary’ walking frames. These smaller silhouettes of walker types have been gleaned from the catalogue
pages of suppliers of prostheses for the disabled. In this installation, however, they stand dwarfed. Their relationship is like a crowding of Lilliputians surrounding a Gulliver of dark intent. The body that might inhabit such a contraption, however, can only be hinted at… it is a body difficult to imagine. There is an extent to which the enormity of the infirmity is countered by the malevolence of its strapped, bolted, welded extension. It is as if sentimentality will be permitted no place in this representation of ‘disability’. Rather, in a deft twist, the artist seems committed to suggest the endless, (if at times black), possibilities of power that transcend the more expected responses to such equipment and the conditions associated with it.

Such humour has long run like a dark current through various strands of Brad Nunn's work. His own lived experience has brought him from time to time into close, even dependent, contact with a range of prostheses since childhood. Since 1997, his works have repeatedly traced the blurry intersections between prosthetics and flesh, and throughout his ongoing research the work has displayed a marked resistance to concede to either sentiment or to the merest hint of utopianism.

Rather, Brad Nunn is an artist who responds with a wry irony to the ways in which the ideals and dreams of childhood often become contorted by fate. He describes his growing up in the 1970s as characterised by a belief in the potential of future technological developments:

I dreamt of being like my heroes, of surviving a right of passage and possessing a body that had been repaired and upgraded by technology. I wanted to be a superman, what we now know as a cyborg, in all its glory.

Nunn’s lived reality, however, was to take him through a series of misadventures, trials and awakenings that prompted his radical reassessment of the super-hero status associated with cyber existences. These harrowing personal experiences included toxoplasmosis (at age 12), followed by scoliosis and in 1993, a brain haemorrhage (arterial veinal malfunction). The latter experience laid him in hospital for four months followed by two years of speech therapy and physical therapy, during which time he had to struggle to regain speech, the use of his legs, and the use of the limbs on the right hand side of his body. The artist describes these life changing personal experiences of organ-technological interface as being far removed from his anticipations of boyhood. He writes,
As I travelled to the dining room of the hospital in my wheelchair, with braced limbs and clutching my special knife, I truly was a cyborg, but alas, one who was from the wrong side of the tracks.

The special knife to which Nunn refers, a brand name article titled in catalogues as *Universal Knife (rocking motion)*, has been the subject of a previous series by Nunn titled *Grasp* (2001, Soapbox). It is an implement on which Nunn bestows special focus – he sees it as the personal prosthesis to which he attaches the most significance. This may at first seem somewhat quaint, given the range and complexity of so many of the prosthetics with which he has ‘worked’. However, it is this relatively simple instrument that enables him to play a role in the everyday ritual of communal meals – the sharing of food and ideas that remains so central to our culture.

It’s probably fair to say that most theoretical treatises dealing with cybernetics are initiated by, and outlaid in relation to, those possessing a ‘normal’ body. Notions of cyborgs, cyberspace and cybernetic organisms were spawned within scientific paradigms that associate the technologically enhanced body with a utopian future. Critics of such positions, such as feminist historian Donna Haraway, appropriated the part organic, part technological body to other more transgressive ends, ones that challenge the stereotypes of gender, nature and technology. It is to these critical, self-reflexive and transgressive models that Nunn claims allegiance.

Although Nunn has claimed that the gender responsive focus of Haraway’s critique is not a primary focus of his own work, there is a sense in which his representations of hybridised, anthropomorphised prostheses extend and correct standard identifications of what it means to be male. As he says,

*I am a white middle class man who was brought up in my father’s workshop. My techniques and my sense of design can be seen to draw upon and to celebrate ‘the coming of the mechanical age…. Reflecting on these insights, I again see myself to be straddling a divide. I am a part of the patriarchy, but I can also identify with being an ‘other’; and yet paradoxically, it is also through my masculine aesthetics that this ‘other’ speaks.*

Yet Nunn’s work is not limited by references to his personal world. Rather, his focus on the ironies of limitation allows his work to extend to farther
horizons – to resonate with broader and deeper concerns. It is a great strength of his work that it survives attempts to reduce it to axioms or didacticism or platitudes. For that is often the case, in references to the ‘disabled’. Rather, Nunn’s point-of-view is committedly self-reflexive and self-critical, to the point that any easy interpretations prove elusive.

And so it is with this work: it is unclear whether we are asked to read it as a humorous testimony of the human spirit; an elegy to never-say-die persistence, or whether it is a critical indictment of the way in which the current global crisis is played out between the relentless struggles for power of old men.

3. A return to the beginning

The after-image of Sheikh Ahmed Yassin’s assassination segues back into focus. The power and influence of men cannot be gauged by the prostheses on which they depend, whether laser guided missiles or wheelchairs. They can augment, or they can irreducibly limit.

Pat Hoffie is an artist based in Brisbane and is Associate Professor and Convenor of Fine Art at The Queensland College of Arts, Griffith University.

**Circuit 2003**

*Circuit* is a symmetrical, patterned, laser-cut plywood object, that is reminiscent of the fretwork breeze panels we see in the traditional timber ‘Queenslander’ home. The aesthetic appeal of *Circuit*, with its hand-finished surface simulating a delicate conté study in an oval frame, belies its origin in a somewhat bizarre coupling between a computer circuit board and a human neural network.

Brad Nunn’s creative exploration of prosthetic devices from the user’s perspective has consistently found its form in whimsical and/or darkly humorous objects. The vague familiarity of these objects engages and entrances the viewer. *Ironhand* 1997 and *Bull Rider* 1999 — an artificial leg with spurs — exemplify this oeuvre. A recently commissioned public artwork, *Cyber Ray* 2002 marked a shift in focus. This metallic, laser-cut, X-ray relief of a sting-ray-like creature floats from the ceiling of the foyer of a new IT building at 175 Eagle Street, Brisbane. For Nunn, this piece demonstrates our adaptation as ‘wired’ worker-users in the information economy.

Following on from *Cyber Ray*, we could read this latest work, *Circuit*, as a nostalgic return to the organic - a preference for the hand-finished over the machine-made. Alternatively, we could see it as a fusion between organism and machine exemplified in the heart pacemaker - a prosthetic device that is embedded in the flesh. Or we could view this work as symptomatic of the artist’s desire for a more user-friendly, symbiotic prosthesis, as basic pattern-forming principles arguably apply to both animate and inanimate systems.

Artistic fantasies about super-human capabilities can sometimes be prophetic. For instance at the end of the last century Australian artist, Stelarc, made a notorious declaration that the human body had reached obsolescence¹, and took to wearing a robotic ‘third arm’, which he operated by flexing his muscles. His visions were not about compensating for loss, but about overcoming the limitations of the human body-mind, and fast-tracking its adaptation for a high-tech future. Today, a robotic arm is being used by therapists to restore muscle and movement to the wasted limbs of stroke victims. It works by teaching the brain how to re-wire damaged nerve pathways.²
However the fact remains that, while the nervous system of a living organism continually modulates its structure as it interacts with its environment, the physical structure of the computer’s circuit board is fixed - determined by the computer’s design and construction. Computer scientists researching artificial intelligence have been encouraged by the concept of quantum computing, which aims overcome this problem.

Quantum physicists demonstrated that solid material objects of classical (Newtonian) physics dissolve at the subatomic level into wave-like patterns of probabilities. On the subatomic level, nature is revealed not as a set of building blocks, but as a complex web of relationships between the various parts of a unified whole.

We now understand pattern not as a mere representation of the probabilities of things, but it terms of probabilities of interconnections. This understanding underpins quantum computing, which, because it is based on a logic that is more akin to a force of nature than a machine, appears set to take us a step closer to the techno-scientific dream of artificial intelligence. Thus Circuit is both an object of beauty and a prospect – albeit one that we might welcome or fear – for it is not the technological invention itself that is at issue, but rather, the human uses to which it is put.

Glenda Nalder

Notes


Encountered in a gallery only just tall enough to contain it, Brad Nunn’s sculpture *Machine Gun Walker*, is a daunting object. It’s big, it embodies the mutant biker technology of the *Mad Max* films, and it raises the question of who would use such a thing. The work gives a new and disconcerting connotation to the term “power walking.”

It is, in theory, a prosthetic device for the disabled, a custom-modified walking frame the likes of which are regularly used (minus the weaponry) by thousands of people who rely on assistance from technology to go about their day’s business. The extent to which conventionally-abled people rely on special devices to do things they otherwise couldn’t (such as travel long distances in a short time or instantly expand their available memory) has led to the proposition that the human body is now technologically obsolete. Nunn acknowledges Stelarc’s vision of a world where to be human is to be augmented and enhanced by technology. The mind is programmed to a higher level of performance than the body, which can’t do all the things people need to do. The disabled have understood this proposition for much longer than everyone else.

Nunn’s works are produced through computer-aided drafting and laser cutting. This is a fairly standard practice among sculptors and particularly designers, but the technology is especially valuable to Nunn, who was affected by a stroke in 1993 while a student at the Queensland College of Art. His working method, the assembly of fabricated components, is adapted from boyhood hobby craft model building.

A penchant for finely engineered and meticulously structured implements has been further developed by an interest in medical equipment. He has taken prosthetic devices as subject matter several times in the past, generally enlarging them to an extent that emphasizes their strangeness. The objects he has represented (such as specially modified tableware and footwear) are known and immediately recognizable objects that have been altered, sometimes only slightly, to suit the needs of people for whom the standard model is less useful. Distortion to the form and scale of familiar things, making them extremely unfamiliar, is essential to the impact of these works on the viewer. Sardonic humour also recurs in this area of his work.

As installed at the Institute of Modern Art, the big *Machine Gun Walker* sculpture faced a wall of tiny cut-outs of various generic designs for walking frames. Apart from being positioned to blow these conventional models away, the super-modified walker seemed even more monstrously big when seen in their company. The viewer was more conscious of being dwarfed by the huge apparatus when made to feel like a giant by the minuscule objects on the wall.
Human size was made immaterial by these discrepancies of scale, and the physical body made irrelevant.

*Machine Gun Walker* is startling because it combines two devices that seem not just unrelated, but emblematic of radically opposed aspects of human experience. The walker is a byword for old age and infirmity. The machine gun represents aggressive power. This diametric opposition is integral to the meaning of the work, but so is a rather poignant connection between the two components. The Vickers machine gun reproduced in this work was the one used in World War I, World War II and the Korean War: the wars in which those who fought are now of an age when walking frames would have taken the place of guns.

As a white middle-class male, Nunn is a member of the patriarchy that is most stridently expressed in military might, yet as someone with what he describes as a “dysfunctional body”, he can identify with the patriarchy’s other. A childhood spent tinkering in his father’s workshop, plus a youthful interest in the structural armature of early 20th-century aircraft and a fondness for the *Biggles* novels about a British fighter pilot are elements of social conditioning for a particular role that is now embodied and contradicted by his work. The structural engineering of an object such as *Machine Gun Walker*, which has about 600 individual components, reflects a mechanical aptitude that has not been blocked by impaired motor skills and has been applied to art rather than military hardware.

The machine gun is an extreme statement of the kind of power to which the disabled are denied access, and the walking frame is the kind of equipment with which they are more commonly associated. Nunn describes what he is doing as looking at prostheses from an impaired person’s point of view. The machine gun is the fantasy, the walker is the reality.
BRAD NUNN

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EDUCATION:
2000-2004  Doctor of Visual Art Candidate
Queensland College of Art, Griffith University
1993-1995  B.A. Visual  (First Class Honours)
Queensland College of Art, Griffith University
1987-1990  B.A. Creative (Double Major- Painting/Sculpture)
University of Southern Queensland

SOLO EXHIBITIONS (selected)
2004 (Machine Gun) WALKER
IMA, Brisbane
2003 PARASITES
SoapBox Gallery, Brisbane
2001 GRASP
SoapBox Gallery, Brisbane
2000 CYBER EVOLUTION
SoapBox Gallery, Brisbane
1999 CUSTOMISED
SoapBox Gallery, Brisbane
1997 IRONHAND
SoapBox Gallery, Brisbane
1996 SHARP LINES
Bauhaus Art Gallery, Brisbane
1995 FRAGILE SURGICAL
Bartleme Galleries, Brisbane

GROUP EXHIBITIONS (selected)
2004 TEMPERATURE : Contemporary Queensland Sculpture
Museum Of Brisbane, Brisbane
2002 FRESH CUT
Craft Queensland Gallery, Brisbane
2001 PLACE / DISPLACE
Queensland College of Art Gallery, Brisbane
CONTINUUM
University of Southern Queensland, Toowoomba
1999 STAFF SHOW
University of Southern Queensland, Toowoomba
1998 PULP
SoapBox Gallery, Brisbane
GROUP EXHIBITIONS (cont.)

1997  
**DAS SUBJECT**  
SoapBox Gallery, Brisbane

1996  
**LOGAN ART AWARD**  
Logan Art Gallery, Logan  
**DAS OBJEKT**  
Whitebox Gallery, Brisbane  
**MASCULINITY**  
Bauhaus Art Gallery, Brisbane

AWARDS

2001-2003  
Griffith University Postgraduate Research Scholarship

1999  
Arts Queensland Development Grant

1996  
Pat Corrigan Artists’ Grant, NAVA

1991  
Hugh Child Memorial Award, University of Southern Queensland  
(awarded to the outstanding graduating student in Visual Arts, 1990)

PUBLIC ART COMMISSIONS

2003  
**21stC GROWTH SHOOTS** sculptures  
Pacific Pines State High, Community Auditorium Building, Gaven

2002  
**MARKER** sculpture and **TRANSIT MARKERS** plaques  
Ipswich Railway Museum, Ipswich

2001  
**CYBER RAY** sculpture  
175 Eagle St, Brisbane

TEACHING (selected)

2002-2004  
**Sculpture Lecturer** (first semester)  
Queensland College of Art, Griffith University

1999  
**Sculpture Lecturer** (first semester)  
University of Southern Queensland

1997-2000  
**Access Arts Visual Arts Workshops**  
Brisbane

PUBLICATIONS (selected)


*EyeLine*, 2003-2004, no. 53, p. 8

*Temperature*, Museum of Brisbane (ex. cat.), cover image, 2003


*Brisbane News*, ‘Champagne art’, 8-12 August 1997, p. 18


Gosling, J. *From Borg to Cyborg*, Online: September 2002, URL:http://users.netmatters.co.uk/ju90/cylife4.htm


