ARTIFICIALITIES: FROM ARTIFICIAL INTELLIGENCE TO ARTIFICIAL CULTURE

SUBJECTIVITY, EMBODIMENT AND TECHNOLOGY IN CONTEMPORARY SPECULATIVE TEXTS

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ABSTRACT

This thesis is an examination of the articulation, construction and representation of 'the artificial' in contemporary speculative texts in relation to notions of identity, subjectivity and embodiment. Conventionally defined, the artificial marks objects and spaces which are outside of the natural order and thus also beyond the realm of subjectivity, and yet they are simultaneously produced and constructed by human ideas, labor and often technologies. Artificialities thus act as a boundary point against which subjectivity is often measured, even though that border is clearly drawn and re-drawn by human hands. Paradoxically, the artificial is, at times, also deployed to mark a realm where minds and bodies are separable, ostensibly devaluing the importance of embodiment. Speculative texts, which include science fiction and similar genres across a number of different media, frequently and provocatively deploy ideas of the artificial to interrogate subjectivity, embodiment, spatiality and culture more broadly. In the past two decades the figures of the cyborg and later the posthuman have been the key concepts guiding critical and comparative literary and theoretical studies of speculative texts in terms of the relation between subjects, bodies, technologies and spaces. This thesis builds on these rich foundations in order to situate the artificial in similar terms, but from a nevertheless distinctly different viewpoint. After examining ideas of the artificial as deployed in film, novels and other digital contexts, this thesis concludes that contemporary artificialities act as a matrix which, rather than separating or demarcating minds and bodies or humanity and the digital, reinforce the *symbiotic connection between subjects, bodies and technologies.*

The thesis structure is five chapters, each focusing on a specific formation of the artificial. The first examines the most recognised trope of artificiality, Artificial Intelligence (AI), as deployed in contemporary science fiction cinema starting with *2001: A Space Odyssey* through to the *Terminator* trilogy. The second chapter focuses on the more recent notion of Artificial Life through a close reading of Greg Egan's novels *Permutation City* and *Diaspora*. The third chapter then takes a more speculative turn, proposing the category of Artificial Space, building on William Gibson's second trilogy—*Virtual Light*, *Idoru* and *All Tomorrow's Parties*—mapping an updated concept of cyberspace more clearly connected with living bodies. The fourth chapter similarly proposes the notion of Artificial People, drawing on two parallel discourses: the development of subject-centred digital special effects technology, such as that used in the *Lord of the Rings* film trilogy; and the unexpected rearticulation of everyday lives and bodies presented in the *Matrix* trilogy. The final chapter, Artificial Culture, is a case study examining artificialities in the post-September 11th Western cultural climate, focusing on the two *Spider-Man* films. The thesis concludes by reinforcing the symbiotic character of artificialities and suggesting future utility of the concept for critical literary and cultural studies projects. By examining the way artificialities are articulated in speculative texts, the thesis ultimately argues that the artificial destabilises rather than defending conceptual boundaries. The artificial points to the inextricable interlinking of subjects, bodies and technologies while simultaneously questioning each of those categories.

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All sources used for this thesis have been acknowledged, and the thesis is my own composition.

Tama Leaver,
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AN ARTIFICIAL INTRODUCTION

The artificial, if nothing else, is conventionally thought to signify objects and things outside of the realm of the natural and the realm of the human. Before situating this study in its academic and cultural contexts, I want to begin instead with a more personal story that is my earliest memory of engaging with the artificial. In August of 1983 my seven-year-old self arrived home to discover my father spending the afternoon of his birthday watching a movie on his brand new Beta video cassette player. When I walked into the lounge room the tape was paused and a strange space pod was hovering on the screen with little mechanical arms outstretched; I thought the pod looked rather like the bulky 'stack hat' bicycle helmet my parents were forcing me to wear while riding, and immediately took a firm dislike to it. Later that night I sat with my father and watched the entire film from the beginning; it was Stanley Kubrick's enigmatic science fiction masterpiece *2001: A Space Odyssey*. At that age a lot of the film's plot was only vaguely accessible, but I do recall feeling far more sympathy for the emotional HAL, whose glowing red eye and exuberant voice were far more engaging than the boring astronauts who talked as though exploring outer space—my personal fantasy—was no more exciting that doing the dishes. After HAL's demise when one of the boring astronauts goes into the dark Monolith in Jupiter's orbit, while a bizarre series of special effects made a real impact on my mind, what stood out more than anything else was during the journey the camera focuses on the astronaut's eye bathed in the bright colours of the alien world outside. At one point, he blinks, and the colours shift to showing a deep red eye with blacks and yellows, an image very similar to poor lobotomised HAL.

While I lacked the vocabulary to express it, this recognition of similarity between the astronaut and HAL—whom I later understood to be an artificial intelligence—was the first moment when I recognised that sometimes our artificial others and ourselves are confrontingly similar. In the weeks after seeing *2001* I remember vivid dreams and, indeed, nightmares in which my own eyes would change to those colours. In retrospect, I suspect my seven-year-old self may have been trying to deal with the implications of connectivity between my own subjective and fleshy corporeality and the heights of digital technology which I had until then imagined *using* to fly into outer space, but never *joining* with those technologies. While a few things have occurred in the intervening twenty plus years, this study is in some ways coming to terms with the confusion and shock I first felt after watching *2001*.

The full title of this thesis, 'Artificialities: From Artificial Intelligence to Artificial Culture – Representing and Constructing Identity and Embodiment in Contemporary Speculative Texts,' contains a number of terms which require initial definition. Artificialities are the overlapping conjunctions between different articulations of 'the artificial', so that term needs to be addressed in the first instance. According to most modern definitions and all contemporary dictionaries, the artificial is specifically outside the realm of the natural. The *Penguin Concise English Dictionary*, for example, defines artificial as: 'made by human skills, not natural; made as substitute for a natural product;

insincere in manner, shallow.'[1] From this definition it is clear that objects and things can be artificial, and that these are explicitly outside of and distinct from the natural. While they may be the product of human intellect and labour, artificial objects are also explicitly beyond the bounds of the human. However, where do recent concepts such as Artificial Intelligence or Artificial Life fit into this definition? Non-natural life or non-human intelligence certainly challenge the very terms 'life' and 'intelligence' as they have been understood following the liberal humanist tradition that has contextualised Western thought for centuries. Taking those difficulties and challenges as a provocation, in this study the artificial is acknowledged as a boundary point against which the natural and the human have been historically defined, but it also highlights the emerging links between the artificial and both subjects and embodiment. The link of the artificial with technology is also fundamental in the blurring of boundaries between the human and the non-human. The shift in our artificialities underpin all five chapters, in each instance asking exactly where the boundary between the artificial and the concept in question—intelligence, life, space, people, culture—lies, as well as just how flexible those boundaries may actually become in the face of scrutiny and speculative examination.

Embodiment is a similarly vague term which has shifted in meaning significantly over the last century. Liberal humanist thought situated the body and the flesh as something

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[1] G. N. Garmonsway, *The Penguin Concise English Dictionary*, London, Bloomsbury Books, 1991, p. 38.

distracting, something other than the mind and also something more clearly linked with the feminine. However, political changes in the twentieth century (and earlier) both in the various forms of feminism and other movements have partially reclaimed embodiment and corporeality as sites of subjectivity and identity for all people. For the purposes of this study, embodiment refers to the specific carnal and corporeal instantiation of bodies, both human and non-human, which entail both visual surfaces and a meaningful interiority of tissues, organs and other elements. While embodiment is generally a material concept, from the second chapter onward the notion of informatic life is examined; embodiment is argued to remain a coherent and meaningful part of the rearticulating subjectivities of artificial life and nominally digital people. At this juncture I would like to emphasise that while subjectivity is sometimes deployed in this thesis as a tactic reinforcing the personhood of a particularly entity, this is not intended to unproblematically promote a narrow, singular and staunchly individual notion of the subject. Rather, subjectivities and embodiment are interrelated fields in which the very terms which define them blur and expand. Embodiment and subjectivity are useful shorthands for particular fields of ideas, not rigid concepts locked in place. As with many terms and ideas explored, subjectivity and embodiment are contextually specific ideas whose definition can vary greatly in their specific instantiations.

While the field of speculative fiction has long been debated, it is also remains a contentious term. Speculative fiction and science fiction are often rendered as the same thing, but the former often appears more acceptable in an academic culture which has only recently warmed to genres outside of the previously championed canon of English

Literature. Speculative fiction is also, at times, broadened to include any horror, fantasy, science fiction or other work which is set in a realm not logically consistent with the material world of contemporary society. However, even in book length works on the subject, the definition is never concrete. In Carl Freedman's recent *Science Fiction and Critical Theory*[2], he valiantly tries to trace the historical lineage of science fiction in order to reach a definition, but after 73 pages of exploring the term, Freedman's use is as contingent and specific as any other. For the specific and contingent purposes of this study, I rely on Marleen Barr's revival of Robert Scholes' concept of structural fabulation, defined as 'fiction that offers us a world clearly and radically discontinuous from the one we know, yet returns to confront that known world in some cognitive way.'[3] Structural fabulation thus highlights the provocative utility of texts in starting meaningful conversations about life, the world, technology, subjectivity or any other issues with which the texts engage. For ease of reference, I use the terms science fiction and speculative fiction interchangeably, but always with the notion of structural fabulation underpinning them. Similarly, the notion of texts is not limited to literary works, but to any cultural product including films, comic books, digital simulations and so forth. Moreover, while texts are often intertwine and interlink across different media, N Katherine Hayles' warning about the importance of media-specific analyses[4] will be

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[2] Carl Freedman. *Critical Theory and Science Fiction*, Hanover and London: Wesleyan University Press, 2000.
[3] Robert Scholes, "The Roots of Science Fiction," quoted in Marleen S. Barr, *Feminist Fabulation: Space/Postmodern Fiction*, Iowa City, University of Iowa Press, 1992, p. 10.
[4] N. Katherine Hayles, "Flickering Connectivities in Shelley Jackson's *Patchwork Girl*: The Importance of Media-Specific Analyses," *Postmodern Culture*, 10, 2, 2000.

taken seriously by demarcating the first four chapters as either dealing with literary or cinematic texts, albeit often with overlapping areas.

This exploration of artificialities, then, is a broadly interdisciplinary study and as such draws theoretical and conceptual insights from a wide body of materials, across a number of academic disciplines. With such broad underpinnings, there are many important influences and writers whose works have contributed to the perspectives formulated regarding artificialities. However, the work of three theorists in particular, all themselves working on interdisciplinary projects, has directly and consistently influenced this study; those theorists are Donna Haraway, N. Katherine Hayles and Scott Bukatman. Haraway's seminal 'Manifesto for Cyborgs' was written over twenty years ago, but remains extremely relevant to cultural analyses of links between subjectivity, embodiment and technology. Haraway argues that everyone in contemporary culture is *already a cyborg*; in the operations of everyday life—from drinking calcium-enhanced milk to wearing contact lenses and talking on mobile or cellular phones—technology and humanity have become inseparable. Moreover, for Haraway, the main point is that there 'is no fundamental, ontological separation in our formal knowledge of machine and organism, of technical and organic.'[5] In challenging one of the key binary divisions at the core of the liberal humanist philosophy behind Western thought, Haraway proposes a cyborg politics which ruptures the boundaries of subjectivity and objectivity,

[5] Donna J Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," *Simians, Cyborgs, and Women: The Reinvention of Nature*, New York: Routledge, 1991, p. 178.

and also related binary divisions including mind and body, male and female, and human and technology. The impact of Haraway's work has been substantial across cultural studies, allowing a feminist politics that could engage with the realm of technology and science fiction rather than primarily react against it. However, even though the implications of Haraway's manifesto—a work Zoë Sofoulis calls a cultural 'cyberquake'[6]—implicitly ruptured the core of humanist thought, even when the cyborg became a more recognisable figure in theory and popular culture, the logical dissolving of related conceptual boundaries and binary thinking did not necessarily follow. To a large extent, this study follows similar lines to those of Haraway, although it does not begin with either the cyborg or the human subject as the focal point of analysis *per se*. The implications of Haraway's manifesto remain relevant, but further work, such as this thesis, is required to amplify the ontological implications across the realm of Western politics and philosophy.

Fifteen years after Haraway's manifesto, N. Katherine Hayles published *How We Became Human* which shares many of Haraway's goals in linking cultural, literary and scientific discourses, but is written from a more defensive position due to an emerging posthumanism which attempts to ignore, escape or transcend embodiment altogether. The posthumanism Hayles maps reduces existence to informatics and consciousness to

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[6] Zoë Sofoulis, "Cyberquake: Haraway's Manifesto," *Prefiguring Cybercultures: An Intellectual History*, Eds. Darren Tofts, Annemarie Jonson and Alessio Cavallaro, Sydney, Power Publications, 2002, pp. 84-103.

nothing more than a (potentially) digital pattern which implicitly is as welcome in computational contexts as in a material one. Moreover, for Hayles, the key point is that

> by these and other means, the posthuman view configures human being so that it can be seamlessly articulated with intelligent machines. In the posthuman, there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals.[7]

However, Hayles is not arguing against the posthuman view *per se*, but rather, tempering it against a wilful abandonment of the flesh without careful consideration. Indeed, Hayles argues powerfully that embodied entities create meaning contextually and the flesh is one of the most significant contexts. Rather than a posthumanism about abandonment and escape, Hayles champions a posthuman future where digital and material life may co-exist in a fashion which still recognises and respects the importance of the flesh. Building on Hayles' work, this thesis makes similar epistemological points but broadens the base of inquiry to include cinematic texts while Hayles' work lies solidly in written narratives. Addressing the artificial also shifts perspectives somewhat, allowing similar questions to be asked from a viewpoint not, in the first instance at least, looking through the eyes of human history.

Scott Bukatman's *Terminal Identity*, published in the middle of the period bounded by Haraway's 'Cyborg Manifesto' and Hayles' *How We Became Posthuman*, focuses more consistently on the realm of science fiction and the ways contemporary speculative texts

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[7] N. Katherine Hayles, *How We Became Posthuman*, Chicago and London, University of Chicago Press, 1999, p. 3.

address subjectivity. While technology is at the core of his study, Bukatman's central point is that 'it is not technology per se that characterises the operations of science fiction, but the interface of technology with the human subject.'[8] Through the notion of the 'terminal' both as an idea of death—termination—and as the point of interface between humans and technology—the computer terminal—Bukatman surveys science fiction in the late twentieth century, making a strong case for the links between subjects and machines. Structurally, Bukatman divides *Terminal Identity* into five chapters, each engaging with a particular version of 'the terminal.' Building on Bukatman's work and borrowing his five chapter structure, this study attempts to address the artificial with the same precision as Bukatman's work on the terminal.

Before outlining the chapters of this thesis, it is useful to address the artificialities explored herein by pointing out a text which is decidedly not artificial in its politics. This thesis argues that the artificial is a realm where embodiment and technology reach a level of symbiosis ontologically and thus provoke many epistemological conversations; when bodies and technologies meet, there are many consequences which must be addressed. The first *Stepford Wives* film, released in 1975, provocatively explored an idyllic American suburb where the men were replacing their wives with humanoid robots with their wives' faces, but which were completely subservient. The film ends with the disturbing image of Katherine Ross' character looking directly into the

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[8] Scott Bukatman, *Terminal Identity: The Virtual Subject in Postmodern Science Fiction*, Durham and London, Duke University Press, 1993, p. 8.

completely black eyes of the android that shares her physical form and is about to replace her altogether. While ambiguous in its politics, *The Stepford Wives* provoked wide-ranging debates with responses ranging from the film being cast as a powerful feminist critique of society, all the way to the polar opposite where it was characterised as being the ultimate male fantasy flick.[9] Nevertheless, the utility of the film was demonstrated in its ability to start conversations about the relationship between politics, embodiment and technology. However, the vastly inferior and commercially unsuccessful 2004 remake, the new *Stepford Wives*, is extremely inconsistent at a narrative level, at some points suggesting that the women of Stepford are being replaced by machines, but at other times suggesting their corporeal forms are medically altered with microchips to modify and control behaviour. While the first cut of the 2004 film ended acknowledging the artificiality of Stepford, even after the men's plans are foiled, after poor test screenings the film was re-cut and a new ending filmed in which the protagonists appear on a television chat show, reinforcing the status quo and ignoring the radical questions raised by the challenges they faced, as if the linking of corporeality and technology could be completely ignored. *The Stepford Wives* of 2004 is thus, at a narrative level, the antithesis of the artificialities mapped in this thesis. The artificial is about examining and conversing about the implications of informatics and humanity intermingling, while the pale remake of *The Stepford Wives* attempts to prevent such a

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[9] Elyce Rae Helford, "'It's a Rip-Off of the Women's Movement:' Second-Wave Feminism and *The Stepford Wives*," *Disco Divas*, Ed. Sherrie A. Inness, Philadelphia, University of Pennsylvania Press, 2003, pp. 24-38.

conversation and fittingly failed by almost any measure applied to film in the twenty-first century.

In mapping the artificialities emerging in the early twenty-first century, this thesis is divided into five chapters. The first two chapters deal with the existing concepts of artificial intelligence and artificial life. Chapter one situates artificial intelligence in the broad scientific context of the Macy conferences and Alan Turing's work, as well as science fictional origins in Isaac Asimov's writing. It continues to carefully shift from a textual to cinematic focus, analysising a number of films including *2001: A Space Odyssey* and the *Terminator* trilogy, and arguing that far from disembodied entities, the artificial intelligences in contemporary cinema have a substantial sense of their own inextricably embodied selves. The second chapter focuses on the 'hard' science fiction novels *Permutation City* and *Diaspora* by Australian author Greg Egan. Egan's writing meaningfully engages with the possibilities of digital existence and informatic life and yet in a significant manner the artificial life imagined still meaningfully exhibits embodied thought, even within a digital context.

Chapters three, four and five argue for and explore more speculative categories of the artificial, through close readings of particular texts. Chapter three engages with the idea of artificial space through a reading of William Gibson's Bridge trilogy. Artificial space is defined as one where embodiment and informatics co-exist in a manner which entails a very useful and practical tactical politics. The following chapter returns to film texts and examines the *Matrix* and *Lord of the Rings* trilogies arguing that the franchises posit

the formation of artificial people both at the level of narrative and of production via the complexities of special effects technologies designed to allow more and more of an actor's corporeal form to be manipulated via digital tools. The final chapter explores the cumulative notion of artificial culture through a reading of the two *Spider-Man* films. The last chapter also considers whether artificialities still have a role in a world in the difficult aftermath of September 11th 2001, and argues that our artificialities can, indeed, provide a space of artificial mourning where the meaning and ramifications of the attacks on the US at that time can be renegotiated. After examining ideas of the artificial as deployed in film, novels and other digital contexts, this thesis concludes that contemporary artificialities act as a matrix which, rather than separating or demarcating minds and bodies or humanity and the digital, reinforce the *symbiotic connection between subjects, bodies and technologies*.

CHAPTER 1: ARTIFICIAL INTELLIGENCE

Introduction

Artificial Intelligence (AI) is the most culturally recognisable conjunction of 'the artificial' with a nominally natural and supposedly exclusively human trait (at a 'high' enough level). This first chapter begins by exploring the origins and development of AI, initially in the overlapping contexts of scientific discourse, especially cybernetics, and science fiction, especially in the world of Isaac Asimov, rounding out these areas with their contemporary rearticulation by Hans Moravec and N. Katherine Hayles. It then critically contextualises the medium-specific processes of remediating conceptualisations of artificial intelligence in science fiction cinema. Science fiction films are grouped into two categories, early AI cinema—focusing on the genre-defining *2001: A Space Odyssey* and two contemporaneous efforts with similar concerns, *Colossus: The Forbin Project* and *Demon Seed*—which provide a fertile ground to explore ideas of embodiment and its relevance to artificial intelligences; and a second section which examines the more recent, iconic *Terminator* trilogy, interrogating popular imagings of the relationships between human subjects and intelligent artificialities.

Origins, Texts and Contexts

Norbert Wiener and Alan Turing

Artificial Intelligence (AI) as a subject of serious scientific inquiry entered the public realm in the decade following the Second World War. Probably the most important arenas in which ideas about AIs were contested were the Macy Conferences. Held

between 1944 and 1955, these interdisciplinary gatherings saw a wide range of participants map out the emergent science of cybernetics. Of all the voices present, one of the loudest was that of Nobert Wiener whose subsequent publications built on the ideas debated at the conferences. In his technical manual *Cybernetics*, published in 1947 and then expanded and re-issued in 1961, and his layperson's guides *The Human Use of Human Beings*, originally published in 1950 and expanded and republished in 1954, Wiener outlined the arguments that would guide cybernetics, as well as the fears with which cybernetics and the wider public imaginary would grapple in relation to artificial intelligences or 'thinking machines'.

Wiener presented a number of important arguments, but the most important, and the one underlying all others, was his re-definition of intelligent life. For Wiener, originally a mathematician by trade, the basic property of the material world was a tendency toward entropy, which he defined as the decay and disorganisation of information. In contrast to the world around them, human beings through information reception, learning, memory, and output, act to maintain and increase the organisation of patterns of information and are thus anti-entropic agents in both individual terms and, more importantly, as a species.[1] Wiener draws a number of analogies between the biological and informatic, including his argument about the function of the human nervous system. He argues that individual nerve fibres are basically single decision-makers, the choice between whether to fire (a nerve impulse) or not. Wiener parallels this decision-making action with the way machines decide between two alternatives. Moreover, Wiener argues that the more complex

[1] Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society*, London, Eyre and Spottiswoode, 1954, pp. 28-33.

decisions where multiple nerves and synapses are employed are comparable to 'switching devices' in machines.[2] Although he does not use exactly the same terms, Wiener's description of the nervous system parallels the way all computer functions can be reduced to binary code (a single decision between a '1' or a '0').

While complex patterns of information may be housed in the human body, Wiener argues that the tissues and material elements cannot be essential, since in the course of a human lifetime, all the biological elements are completely replaced through normal cellular activity. Biological elements are geared towards perpetuating information, through two modes of learning: the first, the phylogenic, is comparable in contemporary terminology to genetic memory; while the second, ontogenic, is individual learning within a normal lifetime. The phylogenic is actually geared towards increasing the capacity for ontogenic learning, which Wiener argues to be one of the defining elements of an intelligent system. However, the phylogenic is not essential since it is only necessary to facilitate the creation and perpetuation of complex informatic patterns. For Wiener, the 'physical identity of an individual does not consist in the matter of which it is made'.[3] At a more basic level, Wiener's argument is that the unique and defining characteristic of intelligent life is that it is a complex pattern of organised information, irrespective of the material substrate which carries it. Our biological form is one way in which complex patterns of information may exist, but the biological is *not necessarily the only way complex patterns of information can exist*. In Wiener's words, '[w]e are not stuff that abides, but patterns that perpetuate themselves'.[4] Moreover, as the informatic pattern in

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[2] Wiener, *Human Use*, pp. 32-34.
[3] Wiener, *Human Use,* p. 101.
[4] Wiener, *Human Use,* p. 96.

humans can be reduced to a binary code, then that pattern could, in terms of Wiener's argument, also exist within a complex machine.

Concurrent with Wiener's publications, Alan Turing's influential essay 'Computing Machinery and Intelligence' appeared in the journal *Mind*. Turing was a British mathematician whose work during the Second World War had been fundamental in cracking the German Enigma cipher codes. He had led the team that constructed the first computing machine, The Colossus, although this information remained under guard during the period of the Macy conferences due to the Official Secrets Act. Wiener and Turing discussed cybernetics and ideas of computing machines at some length in 1947.[5] In his article Turing sought to explore one question: whether a machine could think. In order to determine if machine intelligence was a possibility, Turing described a test he called the 'imitation game' (which later became widely know as the Turing Test). In Turing's scenario, an interrogator sitting in one room must ask two unseen participants questions to determine which is human and which is machine. The communication would take place through typewritten communication so as not to give away the identity of the participants through their material existence or their handwriting (if, indeed, they had hands). Turing argued that if the interrogator could not consistently determine from the participants' answers which was human and which was machine, then it would prove that machines could think (and not only think, but think at a level comparable with their human counterparts).[6] For Turing, the question of embodiment was irrelevant: all that mattered was the capacity to convincingly communicate information.

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[5] Andrew Hodges, *Alan Turing: The Enigma*, London, Burnett Books, 1983, p. 403.
[6] Alan Turing, "Computing Machinery and Intelligence," *Mind: A Quarterly Review*, 59, 236, 1950, pp. 433-4.

In order to contextualise Wiener and Turing's dreams of disembodied intelligent information, it is worth delving deeper into their own lives and motivations. As a mathematician, Norbert Wiener viewed and analysed the world and everything in it in terms of probability and information. Yet, his earlier goals were far more materially oriented. Before mathematics, he pursued a career in biology, but had to abandon this field, as he was too clumsy to handle equipment and complete laboratory work. Wiener's lack of physical co-ordination actually hampered him significantly for most of his life. Indeed, N. Katherine Hayles, in her examination of Wiener's work on cybernetics, suggests that his discomfort with his own embodied form is reflected in his dreams of a disembodied intelligence.[7] Wiener also strongly believed in the autonomous individual liberal humanist subject. He was at some level aware that his work on cybernetics had the potential to undermine notions of liberal humanism (specifically by challenging the boundaries of 'the human,' suggesting intelligence was not intrinsic only to human beings), which he attempted to counter by a number of warnings and qualifications about the role of machines in human society throughout his written work.[8] He viewed his own work as extremely important to the future of humanity, and believed that any resistance to it was due to the slow uptake by the public and scientific communities of new ideas, as exemplified in a passage from his treatise on cybernetics and religion, *God and Golem, Inc.*:

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[7] N. Katherine Hayles, *How We Became Posthuman*, Chicago and London, University of Chicago Press, 1999, p. 88.

[8] See, for example, Norbert Wiener, *Cybernetics: Or Control and Communication in the Animal and the Machine,* 2d ed, Cambridge, Mass, M.I.T. Press, 1961, p. 175, where he warns that 'unguarded use of thinking machines' could lead us to World War III since they contain the *possibility* to act autonomously of their creators.

> For the idea that God's creation of man and the animals, the begetting of living being according to their kind, and the possible reproduction of machines are all part of the same order of phenomena *is* emotionally disturbing, just as Darwin's speculations on evolution and the descent of man were disturbing.[9]

For Wiener, cybernetics was as important to science and the wider community as the theory of evolution, although he trod very carefully in never suggesting (explicitly, at least) that cybernetics and machine intelligence could ever be *part* of a singular theory of evolution.

Similarly, Alan Turing was also a staunch individualist who from an early age developed his own unorthodox methods of inquiry and rarely following the way things 'should be done' at his English public boys' school. His passion for mathematics developed at an early age and drove his career, although his experiences in the Government Code and Cypher School during the Second World War broadened his interests to the development of machinery and electrical systems. However, the most difficult element of Turing's life was the fact that he was gay in an era when his sexual choice was not only frowned upon but still decidedly illegal. In Andrew Hodges' biography of Alan Turing, he points out that 'like any homosexual man [in that period], he was living an imitation game, not in the sense of conscious play-acting, but by being accepted as a person that he was not.'[10] Turing's own 'imitation game' proved unsuccessful when in 1952 he was charged with 'An Act of Gross Indecency' having been involved in a gay sexual relationship: he was sentenced to experimental 'organo-therapic' treatment, which consisted of injecting him with female hormones thought to dull sexual drives. The 'treatment' rendered Turing impotent and he also developed breasts. In 1954 Turing killed himself, an act

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[9] Norbert Wiener, *God and Golem, Inc. A Comment on Certain Points Where Cybernetics Impinges on Religion,* Massachusetts, M.I.T. Press, 1964, p. 47.
[10] Hodges, *Alan Turing*, p. 129.

blamed by many who knew him on the after effects of his treatment and persecution.[11] In the context of his life, Turing's 'imitation game' appears as telling about his own experience as about his position on machine intelligence. For a person who longed to be left alone or at least treated as ordinary, he found himself to be 'an ordinary homosexual atheist mathematician'.[12] The imitation game described in relation to intelligent machines was, in part at least, a fantasy of escape, of being treated in terms of his work on mathematics and cybernetics, not in terms of his personal embodied choices which he was forced to hide from the critical and unaccepting eyes of the outside world.

Although Turing and Wiener approached ideas of Artificial Intelligence from somewhat different perspectives, they shared two important conclusions: both defined intelligence as a function of patterns of information and communication; and neither believed that the human body was the only vessel in which intelligent patterns of information could exist. Thus credible premises for a thinking and learning machine were developed: if the essence of intelligence is the organisation and communication of complex patterns of information, then the computer, which is basically a complex information processing device, seems the most logical place for human-level intelligence to arise. From Turing and Wiener's foundational work, cybernetics as a scientific discipline, and as a set of ideas in the broader public imaginary, developed and mutated over the following half century. However, the relevance and impact of their formative works is obvious even in the most contemporary texts, exemplified in Hans Moravec's *Mind Children* and *Robot*.

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[11] Hodges, *Alan Turing*, pp. 456-487.
[12] Hodges, *Alan Turing*, p. 114.

Hans Moravec

Hans Moravec's two texts *Mind Children: The Future of Robot and Human Intelligence* (1988) and *Robot: Mere Machine to Transcendent Mind* (1999) are the most extreme hard science arguments for the disembodied informatic intelligences that were partially envisaged by Wiener and Turing. Moravec, the founder of the world's largest robotics programme at Carnegie Mellon University, not only believes that machine intelligence will be equal to human intelligence by 2030, but, even more extreme, he believes that humanity will be usurped by 'its own artificial progeny' in the years to follow.[13] Moravec argues that in the near future, the 'uneasy truce between mind and body breaks down completely' and biological life will become obsolete, ushering in a 'postbiological' era in which artificial intelligences, the offspring of the human mind, will inherit the Earth and human beings will go the way of the dinosaurs.[14] Moravec cites both Turing and Wiener as the 'pioneers' of the idea of machine evolution; Wiener's work is utilised throughout Moravec's writing, while Turing's article on machine intelligence provides the basis for Moravec's philosophical defence of the idea of AI in *Robot*. Moreover, Moravec's conclusions in *Mind Children* sound ominously close to a paraphrase of Wiener's arguments in *The Human Use of Human Beings*: Moravec argues that human beings need to move from a 'body-identity position' to a 'pattern-identity'; 'Pattern identity … defines the essence of a person … as the *pattern* and the *process* going on in [their] head and body, not the machinery supporting that process. If the process is preserved, I am preserved. The rest is mere jelly.'[15] In Moravec's work, the idea of

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[13] Hans P. Moravec, *Mind Children: The Future of Robot and Human Intelligence,* Cambridge, Mass, Harvard University Press, 1988, pp. 1; 68.
[14] Moravec, *Mind Children*, p.4.
[15] Moravec, *Mind Children,* pp. 116-7. Italics in original.

patterns of information as the essence of intelligent life is no longer restrained by Wiener's adherence to the ideals of liberal humanism, so the idea is taken to its logical extreme where bodies, biology and human beings *en masse* are viewed as obsolete in the face of the emerging Artificial Intelligences.

Yet, even Moravec's position on embodiment and intelligence alters between his first and second publication. In the first, *Mind Children*, embodiment serves no purpose whatsoever except to house the pattern-identity of an individual which would function so much clearer and faster if it could be removed from the 'jelly' of the flesh into the digital realm. One of Moravec's most macabre descriptions is his vision of a device to 'transmigrate' a human intelligence into a machine: he describes a scenario where a robot surgeon slowly cuts away layer after layer of the human brain, scanning each cell to form a complete picture of the information stored in the brain and then finally, when the biological skull is simply an empty vessel, a digital human can be transferred into a waiting machine housing.[16] With a hint of the gothic, Moravec describes the person being completely awake during this procedure, ostensibly to ensure that the replication of information is exact. However, by his second book, Moravec concedes that even if scanning of a human mind is completely successful, embodiment will still have a role to play. He argues that biological human beings will retain the need for a 'sense of body' and thus the transplanted personality will have to have a virtual body, or avatar, created to allow the sensory and motor functions (or material context) that create and maintain meaning for human beings.[17] Moravec's admission of the necessity of embodiment does not,

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[16] Moravec, *Mind Children*, pp. 109-110.
[17] Hans P. Moravec, *Robot: Mere Machine to Transcendent Mind*, New York, Oxford University Press, 1999, p. 170.

however, restrain his vision of humanity's irrelevance, and he argues that if embodied human simulations are allowed to remain in the digital realm, then their relationship with the native artificial intelligences would not be on equal terms; '… a human mind would lumber about in a massively inappropriate body simulation, like a hardhat deep-sea diver plodding through a troupe of acrobatic dolphins'.[18] For Moravec, intelligent informatic patterns own the future, and the necessity of embodiment for human beings will simply ensure our extinction.

N. Katherine Hayles: 'The Materiality of Informatics'

In her book *How We Became Posthuman*, N. Katherine Hayles analyses, among others, Wiener and Moravec's theories about information as the basis of life and argues that, in divorcing information from a material substrate, they have in effect removed information from any context and thus, for Hayles, from meaning.[19] She reads both as arguing that information is defined by what it *is*, not what it *does*. Hayles, by contrast, argues that information in any meaningful way is inextricably intertwined with material embodiment. She argues further that 'embodiment' entails contextualisation within 'the specifics of place, time, physiology and culture'.[20] Context is not only as important as information but is, in fact, part of information since information is referentially formed and referentially meaningful. Moreover, there are two levels of referentiality: the first level is the external, in terms of the specific time, place and culture; while the second and equally important level is the internal or material level, in that information within an embodied system refers to and is part of that material system. Any attempt to remove information from

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[18] Moravec, *Robot*, p. 172.
[19] Hayles, *How We Became Posthuman*, pp. 51-53.
[20] N. Katherine Hayles, "The Materiality of Informatics," *Configurations*, 1, 1992, p.155.

embodied context thus removes the reference points that originally shaped that information, rendering the so-called information that remains meaningless.[21] To be fair to Hayles, however, it must be pointed out that her argument was not intended to argue that AIs were, should be, or necessarily would be embodied entities, but rather to refute claims that human beings could be reduced to purely informatic forms. Conversely, it is equally important to point out that in arguing against the idea that intelligence can be reduced to a purely informatic form, Hayles refutes one of the main premises for the development of artificial intelligence as envisioned by Norbert Wiener.

Isaac Asimov: 'Oh, Jupiter, a robot Descartes!'

Isaac Asimov's formative explorations of issues regarding AIs or 'thinking machines' occurred in the same historical and cultural context as Wiener and Turing's work, but were not a product of the hard sciences *per se*[22]: rather, they emerged as part of the Golden Age of American science fiction (SF). Asimov was born in Russia in 1920, of a Jewish background, and immigrated to the United States with his parents at the age of three, initially residing in Brooklyn. He had a relatively lonely childhood, spending much of his time outside school hard at work in his parents' confectionery shop. He had a passion for reading and writing, and, under the wing of John W. Campbell (who was then editor of *Astounding*, probably the most influential science fiction periodical of the time), Asimov launched his prolific writing career in his late teens. During the 1940s, Isaac Asimov's most influential pieces were nine short stories based around the possibilities of robotic life in a

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[21] Hayles, 'The Materiality of Informatics', pp. 147-170.
[22] Although Isaac Asimov did teach in the hard sciences (mainly chemistry) for many years and did produce a number of hard science textbooks amongst his hundreds of publications.

human world. In 1950, the same year that Turing's 'imitation game' was described in the pages of *Mind*, Asimov's explorations were collected under the provocative title *I, Robot*.[23] However, before analysing Asimov's speculative textual engagement with notions of AIs and robotics, it is worth considering why the term Artificial Intelligence does not appear in any of the *I, Robot* stories.

The absence of the term 'Artificial Intelligence' from Asimov's early robot stories and indeed from Alan Turing's 1950 'Computing Machinery and Intelligence' as well has a simple explanation: the term had not yet been conceived. 'Artificial Intelligence' was first coined in the following decade by John McCarthy, one of the pioneering figures of AI design and programming, when he organised the 1956 *Dartmouth Summer Research Project on Artificial Intelligence*.[24] However, although Asimov and Turing's initial explorations did not explicitly use AI as terminology, their texts explore many of the central themes that AI as both a concept and a material possibility provoked. Turing's notion of the 'thinking machine' became a synonym for AI, while Asimov's notion of robotics similarly became part of AI design and research, but in a more complex way which mutated substantially in different contexts.

Although in the hard sciences robotics now refers more to the construction of mechanical bodies (and AI more to the construction of artificial minds), when

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[23] Michael White, *Asimov: The Unauthorised Life*, London, Millennium, 1994, pp. 38-39. White also points out that the robot short stories were not the only texts that Asimov was writing during the 1940s. However, in retrospect, it was the robot stories on which Asimov's prolific and successful career was founded.

[24] Jack Copeland, *Artificial Intelligence: A Philosophical Introduction*, Oxford, Blackwell, 1993, pp. 8-9.

Asimov invented the term robotics, he made no such distinction.[25] He took embodiment for granted: every robot was a material entity in its own right (although not necessarily with its own rights) and came complete with its own mechanical body.[26] Asimov explicitly links his extrapolated robotic future with the formative works of Wiener and Turing through a number of strategies, the most explicit being the development of the character Susan Calvin. The short stories which form *I, Robot* are linked by a narrative told from Calvin's point of view in a retrospective interview given during the weeks leading up to her retirement. Susan Calvin's career explicitly links the fictional history of robotics with the 'real' work being discussed in the Macy conferences in that Asimov describes her as having completed 'graduate work in cybernetics' in the first decade of the twenty-first century, and she was then employed as a 'robopsychologist' in 2008 by the first firm to commercially produce robots.[27] Here the emerging scientific discipline of cybernetics is located in Asimov's future history, and the conceptual distance from cybernetics to a future in which robots are so complex that they have their own psychology appears not that far at all. Implicit in the need for a robopsychologist is also the idea that robots will have such distinct and complex 'minds' (or, at least, intelligence) that their actions will not be logically transparent, but rather will require interpretation and analysis through the same processes which attempt to comprehend human thought. Just as in

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[25] Asimov, however, did not invent the word robot. Karel Čapek first used the word robot in his 1920 play *R.U.R (Rossum's Universal Robots)*. Čapek used the Czech word for worker, *robota*, to describe a working class of mechanical entities built in a human-like form. In the play, the robots are treated as a slave class, and eventually rebel against their human overlords. Even in this first context, the word robot was already charged with the ethical and moral tensions that may result from the creation of intelligent artificial lifeforms.

[26] There are the possible exceptions of 'The Brain' and 'the Machines', although the latter are referred to as 'nothing but the vastest conglomeration of calculating circuits ever invented' and void of personality (Isaac Asimov, *I, Robot,* 1950, London, Panther, 1968, p. 186) while the former is specifically designed to be an '*idiot savante* … it doesn't really understand what it does' (*I, Robot*, p. 140) and thus does not comprehend its own lack of mobility.

[27] Asimov, *I, Robot*, p. 9.

Norbert Wiener's work, the possibility of dealing with human-level intelligence in a non-human form provoked anxieties about the future of human beings. For Asimov, any discussion of robots had to be contextualised within particular restrictions that would maintain the superior position of humans. To this end, he postulates the Three Laws of Robotics.

The Three Laws of Robotics described in *I, Robot* formalise the fear that robots and AIs could threaten an anthropocentric world, since Asimov highlighted and pre-empted the notion of robotic rebellion or independence by creating a world where any and every robot created *must* have strict laws hardwired into their 'positronic brains' to prevent them being able to harm or disobey humans. Those laws were thus formalised:

1. A robot may not injure a human being, or, through inaction allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the first law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.[28]

There is some contention as to whether Asimov or his editor John Campbell first committed these laws to paper: Asimov always claimed they were first written by Campbell, while Campbell always stated that he wrote down what Asimov had already described in one of their many conversations.[29] Either way, the Three Laws of Robotics became one of the central ideas for any speculative text that dealt with robotics or AIs. Different versions and adaptations of the Three Laws which explicate a hierarchy with human life valued over and above 'artificial' life can be

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[28] Asimov, *I, Robot*, p. 8.
[29] James Gunn, *Isaac Asimov: The Foundations of Science Fiction,* New York and Oxford, Oxford University Press, 1982, p. 20; and White, *Asimov: The Unauthorised Life*, pp. 59-61.

seen in many SF texts from novels and short stories to television and film.[30] Moreover, the widespread currency of the Three Laws both in Asimov's work and elsewhere has led critics such as J.P. Telotte to argue that 'in their careful formulation … [the Three Laws] hint at a widespread cultural anxiety' about the relationship between human beings and robotic or artificial intelligences.[31] Anxiety about the role of artificiality in a human world is precisely what drives many of Asimov's stories, evidence of which can be seen in a close reading of 'Reason', one of the most well known tales from *I, Robot*.

Isaac Asimov's 'Reason' was first published in Campbell's *Astounding* in 1941 before becoming part of the *I, Robot* collection.[32] In the story, a new robot QT-1, nicknamed Cutie, becomes convinced through his[33] own reasoning that human beings are inferior to robots and are thus incapable of being their creators. Cutie is onboard a space station and is responsible for processing and obeying instructions from a massive sensor array. The robot concludes that the array must be 'the Master' since robot and humans alike obey its instructions. In the historical and cultural context of the original 1941 publication, 'Reason' was most notable for its primarily political argument against the 'reasoning' behind fundamentalist religious beliefs. However, within the broader narrative of *I, Robot*, Cutie's significance lies in that he is ostensibly the first robot to disobey human beings (although by Cutie's logic, he is

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[30] For example, Rudy Rucker's novel *Wetware,* New York, Avon Book, 1988, features robots restricted by the Three Laws called 'Asimovs' and Cynthia Fuchs points out that the film *Robocop* features a cyborg who comes complete 'with explanatory inscribed Directives (lifted from Asimov's "Laws of Robotic")' in '"Death is Irrelevant": Cyborgs, Reproduction, and the Future of Male Hysteria' in Chris Hables Gray, ed., *The Cyborg Handbook*, Routledge, New York and London, 1995, p. 285.

[31] J. P. Telotte, *Replications: A Robotic History of the Science Fiction Film*. Urbana and Chicago: University of Illinois Press, 1995, p. 43.

[32] Asimov, 'Reason', 1941 in *I, Robot,* pp. 52-70.

[33] Asimov specifies Cutie's gender as masculine. See 'Reason', p. 52.

obeying the master of human beings, thus not completely contradicting the Three Laws). The scene in which Cutie confronts Gregory Powell and Mike Donovan (the only humans onboard) is of particular relevance: as the two men grumble beneath the glare of the 'red glow of the robot's eyes', Cutie explains that it is impossible for human beings to be the creators since the 'material you are made of [is] soft and flabby, lacking endurance and strength, depending for energy upon inefficient oxidation of organic material … [p]eriodically you pass into a coma and the least variation in temperature, air pressure, humidity, or radiation intensity impairs your efficiency … [y]ou are *makeshift*' while Cutie argues that he has a 'strong metal [body], … [is] continuously conscious, and can stand extremes in environment easily'.[34] Cutie concludes, in examining not just the comparable intelligence of humans and robots but also the efficiency of their embodiment, that human beings are the older model, inferior to robots, and are obsolete.[35] When Cutie concludes that 'I myself, exist because I think—', Gregory Powell laments, 'Oh, Jupiter, a robot Descartes!'[36], implicitly recognising the mode of argument from human history, although in the same instant, challenging the anthropocentric uniqueness of Cartesian rationale since the same logic has allowed a robot to 'rationally' determine his own existence and his own superior position in the material world. There are two important elements worth emphasising in relation to 'Reason': the first is that, unlike Wiener and Turing's notions of AIs, Asimov's robots value embodiment to the extent that they see their harder, more durable bodies as evidence of superiority; and secondly, that even with such strong restrictions as the Three Laws, any intelligent

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[34] Asimov, 'Reason', pp. 54; 56-57.
[35] Cutie argues: '[t]he Master created humans first as the lowest type, most easily formed. Gradually, he replaced them by robots, the next higher step, and finally he created me, to take the place of the last humans.' (Asimov, 'Reason', p. 57).
[36] Asimov, 'Reason', p. 56.

being (organic or technological) implicitly has the creative resources to 'reason' their way into doing something that at first glance violates those restrictive laws.

Screening Cinematic Speculations

Having briefly mapped the historical and textual origins of conceptions of Artificial Intelligence as they emerged in the years following the Second World War, this chapter will now focus on the way these ideas have been reflected, developed, examined, celebrated and feared in the wider popular imaginary as evinced in mainstream Hollywood cinema. The following analysis will be broken into two sections, the first focusing on early AI cinema—namely Stanley Kubrick's *2001: A Space Odyssey* and two similarly-themed films released in the following decade, *Colossus: The Forbin Project* and *Demon Seed*—and the second utilising the more recent *Terminator* trilogy in exploring the potential relationships between humanity and artificial intelligence(s). Before directly addressing the selected films, two examples will be used to clarify the relationship of SF film to notions of the artificial and more detailed attention will be paid to the operation of SF *film* as distinct from SF literature.

As film theorist Annette Kuhn has argued about most academic SF film analyses, 'widespread but largely untheorised, is an assumption that science fiction films operate within a network of meanings (and indeed actions) which extends beyond the films themselves.'[37] However, the difficulties inherent in film analyses are by no means limited to genre-based readings. Analyses of a number of film, television and other related non-literary 'texts' within the broad arena of Cultural Studies strive to

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[37] Annette Kuhn, "Introduction: Cultural Theory and Science Fiction Cinema," *Alien Zone*. Ed. Annette Kuhn, London and New York, Verso, 1990, p. 7.

take into account the differences between media. Similarly, the way cultural concepts and ideas operate differentially as they are enacted and addressed in different media is central to such studies. However, despite several significant investigations[38], one reason that specific interconnections between cultural concepts or ideas and their (re)deployment, enactment and development in filmic contexts remain untheorised is the intricate, interwoven and multiple journeys that those ideas and concepts take. In terms of film, ideas and concepts can be (re)shaped through processes of film production through both the various perspectives and actions of directors, producers, scriptwriters, studios, actors, special effects crews and others as well as the limitations and requirements of the technical apparatuses utilised. The context of the audience's engagement with a film text similarly can change the meanings they take from a film as can the various scientific, literary, social, economic, political, artistic and other cultural engagements and developments of contained ideas or notions both during film production and during the viewing process. Although the complexity of cinematic terrains prevents a complete theoretical or even ostensibly empirical delineation of concepts which are deployed within it, it is still possible to draw a partial map charting an incomplete but still representative trajectory of a concept by utilising explicit markers in texts examined. To demonstrate a partial map, two examples will be briefly (and thereby necessarily reductively) sketched: the first example will be electronic transportation of matter; and the second will be AI as portrayed by HAL in *2001*.

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[38] The most notable contemporary attempt has been David Bolter and Richard Grusin, ***Remediation: Understanding New Media,*** Cambridge, Mass, MIT Press, 1999.

In June 2002, a research team at the Australian National University (ANU) released their initial findings and reports into a system to teleport (move from one point to another through electronic means) the subatomic particles that constitute light. The *BBC News Online* article on the breakthrough began with the sentence, '…a long way from *Star Trek*, but teleportation … has been successfully carried out in a physics lab in Australia'[39], while the Australian Broadcasting Commission state and national nightly television news programs in Australia began their segment on the ANU work with a scene from the movie *Star Trek: Generations*[40] where the fictional characters get from one point to another using their 'matter transporters'.[41] In terms of the way the concept of matter transportation has developed, the most interesting part of these news reports is not the scientific development *per se*, but that the most accessible language to describe the new technology was not hard science itself or even a talking-head interview with a reputable scientist. Rather, the language adjudged by reporters and news editors as the best and most accessible to describe the emergent technology was science fiction. Since SF has in part functioned as a space to explore and interrogate possible technologies, in a contemporary Western society which is visually and technologically dominated (and mediated), cultural critics such as Scott Bukatman do not appear to be overstating the case with claims

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[39] David Whitehouse, 'Australian Teleport Breakthrough,' *BBC News (Online Edition)*, 17 June 2002, http://news.bbc.co.uk/hi/english/sci/tech/newsid_2049000/2049048.stm, accessed 18th June 2002.

[40] *Star Trek* is in itself difficult to describe but the term franchise seems most applicable. *Star Trek* began as a television series in the 1960s, was axed after two and a half seasons, but the immense cult (and now more mainstream) following provoked not only a number of popular Hollywood films (ten at last count), an animated television series plus four spin-off series (*Star Trek: The Next Generation, Star Trek: Deep Space Nine, Star Trek: Voyager* and prequel series *Enterprise*) but also hundreds of novelisations, both popular and academically related books, 'official' and 'fan' websites and a merchandising empire. The idea of media convergence (where film, television, videogames, the internet and print media start to merge, becoming more holistic and inseparable) is also examined in chapters four (in relation to the *Matrix* and *Lord of the Rings* franchises) and five (in relation to the *Spider-Man* franchise).

[41] Australian Broadcasting Corporation (ABC) Television News, Perth, Western Australia, 17th June 2002, 7pm. The same news item was also used in every other state news program in Australia (on that night) and in the later national news program.

that 'science fiction functions as a dominant language within the society of the spectacle.'[42] That is not to suggest that SF is the origin of the concept of matter transportation. Norbert Wiener's *Human Use of Human Beings*, examined earlier in this chapter, includes speculation that 'the idea that one might conceivably travel by telegraph, in addition to traveling by train or airplane, is not intrinsically absurd':[43] it is technologically demanding, but entirely conceivable, given Wiener's conception of life as reducible to an informatic form. Wiener's speculations about matter transmission via electronic media, the *Star Trek* 'fictional' enactment of transporters and the various news reports covering the ANU researchers' work are all strong markers of how the concept of matter transportation has developed over time and viewing the three examples together develops a rudimentary map of how Western culture has engaged with the idea of transporter technology. Thus, although these markers occur in different contexts—mainstream journalism, hard science and SF film—the conceptual distance between them today as they are culturally 'read' (for specific concepts, at least) is not that far at all.

Refocusing on Artificial Intelligence, even a cursory examination of director Stanley Kubrick's genre-defining *2001: A Space Odyssey* illuminates a number of explicit markers referring to earlier explorations of the concept of AI. Andrew Hodges in his biography of Alan Turing points out a number of references in *2001* to Turing's 'Computing Machinery and Intelligence' paper: the date *2001* is an explicit reference to Turing's 1950 prediction that AI will be a reality in fifty years[44]; Arthur C. Clarke,

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[42] Scott Bukatman, *Terminal Identity: The Virtual Subject in Postmodern Science Fiction*, Durham and London, Duke University Press, 1993, p. 31.
[43] Wiener, *Human Use*, p. 103. Wiener's ideas were also influenced by earlier speculative fiction as he was an avid reader of SF (and tried to write his own SF stories, with limited success).
[44] Hodges, *Alan Turing*, p. 533.

who co-wrote the script with Stanley Kubrick, refers to reading Turing in the introduction to his novel (written simultaneously during scripting and film production)[45]; while the narrative of the novel *2001* is equally explicit, Clarke writing '[w]hether HAL could actually think was a question which had been settled by … Turing … [since] HAL could pass the Turing test with ease'.[46] Similarly, Steven Levy points out that *2001* has a number of direct references to the 'real' development of computer technologies (which both parallel and are part of the scientific development of AI): the song 'Daisy', for example, which HAL sings as David Bowman effectively lobotomises the AI is an explicit reference to the development of computers at Bell Laboratories where 'Daisy' was the first song ever 'sung' by a supercomputer in 1957.[47] While there are no explicit references to Norbert Wiener's work it is very likely that Clarke, and possibly Kubrick, was familiar with his writing. Wiener's warnings about the threat of AI to liberal humanism and humanity *per se* resonate loudly within the boundaries of *2001*. Although the impact of *2001* is difficult to measure in empirical terms it is still apparent that HAL has become the dominant cultural image of AI in Western culture. Numerous cultural texts in various media deploy HAL to evoke, explain or simply toy with AI and related ideas.[48] However, the impact of *2001* and HAL is distinctly apparent in recent scientific developments of AI, most explicitly in the work of an Israel-based team whose child-like artificial intelligence has been referentially and

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[45] Hodges, *Alan Turing*, p. 533.
[46] Arthur C. Clarke, *2001: A Space Odyssey*, 1968, London, Arrow; 1984, p. 95. Clarke's novel also refers to other 'hard science' projects on Artificial Intelligence (p. 94).
[47] Steven Levy, *Hackers*, New York, Anchor Press, 1984, p. 205.
[48] For example the *South Park* episode 'Trapper Keeper' (US airdate 15th November, 2000) features a montage of SF film references (*2001*¸*Terminator 2* and *Akira*) sewn together with a central reference to HAL's lobotomy in *2001*, while even films which do not feature AI still refer to HAL to evoke related technology or simply alien-other fears, as in the Hollywood film *Independence Day* (1996) where the scientist-hero has an ironic greeting from HAL on the startup screen of his laptop.

prophetically named, HAL.[49] While the film itself and the various markers or connections in terms of AI both before and after the film as described constitute a very partial map, they still serve to sketch a basic geography of the networks and inter-relations between AI and film. Another powerful way of conceptualising these connections, to borrow from Brian McHale, is to think of these examples as part of a 'feedback loop' between SF film and broader cultural enactments (such as in the hard sciences or literary theory).[50] Moreover, it is worth emphasising that this chapter, and the larger thesis itself, is an attempt to create an introductory map of feedback loops centred around notions of the artificial.

Before proceeding to analyse the films in question, it is important to note that although the various films, novels, theories and other examples from various media are all treated as 'texts' in the sense that they are all open to analysis using tools derived from literary and cultural theory, it is equally important to allow for differences in media and to heed N. Katherine Hayles' warning about the 'importance of media-specific analyses'.[51] While retrospectively deified media prophet Marshall McLuhan was overstating the case in his oft-quoted argument that 'the medium is the message',[52] he did make the salient point that the medium—the

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[49] Reuters, "Israeli HAL Eyes Turing Test," *Wired News Online*, 20th August 2001, http://www.wired.com/news/technology/0,1282,46171,00.html, accessed 26th November 2001.

[50] Brian McHale, "POSTcyberMODERNpunkISM," *Storming the Reality Studio: A Casebook of Cyberpunk and Postmodern Fiction*, Ed. Larry McCaffrey, London, Duke University Press, 1991, p. 320. It should be noted that McHale was referring to the cyberpunk strain of SF and its relationship with literary theory, but the concept of feedback loops is equally suited to describing contemporary SF's relationship with Western culture in general.

[51] As argued in N. Katherine Hayles, "Flickering Connectivities in Shelley Jackson's *Patchwork Girl*: The Importance of Media-Specific Analysis," *Postmodern Culture*, 10, 2, 2000.

[52] Marshall McLuhan, *Understanding Media: The Extensions of Man,* London, Routledge & Kegan Paul, 1964, p. 7. It is worth noting that part of McLuhan's argument rests on his assertion that each new medium is filled by old media in so much as the content of a movie is a novel or the content of print is speech. While overly reductive, McLuhan's work is more palatable (although still problematic) when his extremely broad definition of media is taken into consideration.

mode of communication—is not independent of but rather an important *part* of content. McLuhan's work attempts to render any distinction between content and media untenable. In terms of science fiction cinema—a category to which all the films in this chapter belong—the distinction between media is extremely important. Although certain science fiction novels have, to some extent, been critically and academically accepted as meaningful literary forms and sites of social critique, Brooks Landon argues that the same acceptance rarely extends to SF film.[53] Vivian Sobchack concurs, arguing further that

> since the written literature was there first and is both more plentiful and accessible than film, the common tendency is to remember all the good—and therefore, frequently anthologised—SF literature and compare it with the worst SF films.[54]

However, challenging critical prejudice against SF films is not simply solved by distinguishing the 'good' from 'bad' because for many the presumption is that 'the medium itself … is incapable of dealing with ideas as effectively as does literature.'[55] In generic terms SF in particular is viewed as 'trashy', more so than other film genres because it usually contains and is often primarily characterised by the use of special effects (SFx). Although it may be SFx that attract audiences, and indeed often those who would not read SF in print, audiences do not *just* watch the visual effects, meaning that far more people engage with science fictional concepts (albeit sometimes unintentionally) through film that any other medium. Moreover, SFx, rather than always being commercially driven devices to create ever-larger explosions and spacecraft, are more usefully viewed as an expression of SF cinema's structural ambivalence.

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[53] Brooks Landon, *The Aesthetics of Ambivalence: Rethinking Science Fiction Film in the Age of Electronic (Re)Production*, London, Greenwood Press, 1992, p. xvi-xvii.
[54] Vivian Sobchack, *Screening Space : The American Science Fiction Film*. 2nd, enl. ed. New Brunswick, N.J: Rutgers University Press, 1997, p. 20.
[55] Sobchack, *Screening Space*, p. 24.

Many film scholars assert that ambivalence is in fact central to all SF film; Brooks Landon goes so far as to argue that it is 'the basic or distinguishing structural pattern' of SF cinema.[56] Moreover, in Vivian Sobchack's seminal *Screening Space* she examines the iconography of SF cinema and concludes that the associated connotations and symbolic meanings of SF film icons continuously shift and change to the extent that, paradoxically, the only stable characteristic of SF iconography is ambivalence. Sobchack's argument is reinforced by comparison of examples such as the train in Westerns or the gun in Westerns and Gangster movies which are (relatively) symbolically stable, and the SF icons of spacecraft and robots which frequently alter in their symbolic significance.[57] Returning to special effects, ambivalence is also evident in comparisons of the most *spectacular*, such as the lightsabers, laser blasters and epic space battles in the *Star Wars* films; and the most *speculative*, such as the morphogenic SFx in *Terminator 2* which implicitly interrogate (or at least problematise) the boundaries of subjectivity. Brooks Landon succinctly summarises the matter thus:

> SF film combines *both* narrative *and* spectacle, offers the pleasures of *both* art *and* trash, appeals to *both* the intellect *and* the emotions, and can support *both* escapism *and* self-enlightenment. And it is precisely this both/and impulse in SF film that leads to its inherently ambivalent nature.[58]

Another important site of ambivalence is the internal generic tension in SF film in that it relies on cutting edge technology for its spectacular visual SFx, while simultaneously being the most fertile filmic arena for explorations and panic over the possibilities of highly technologised societies. While the ambivalence of SF film means many critics can dismiss SF cinema as overtly commercial, trashy and a site

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[56] Landon, *Aesthetics of Ambivalence*, p. 22.
[57] Sobchack, *Screening Space*, p. 66.
[58] Landon, *Aesthetics of Ambivalence*, p. 64.

of spectacle, it is equally true that many SF films contain speculative ideological, moral and political critiques despite being explicitly conceived as commercial ventures.[59] Moreover, turning to SF cinema with some characteristics of the medium having been clarified, it becomes apparent that the tension between *spectacle* and *speculation* is not just a tension between different films, but a tension *internal* to many SF films, that can be powerfully deployed in both explorative and entertaining ways. Such tension is evident in the first film to be examined, *2001*.

Early Artificial Intelligence Films: 'When are you going to let me out of this box?'

Nowhere in cinema history has breathtaking visual spectacle and profound philosophical speculation been more successfully combined than in enigmatic director Stanley Kubrick's SF masterpiece *2001: A Space Odyssey*. Visually, the film broke new ground with its amazing stargate finale, while the attention to detail in the moon and spaceflight sequences were so accurate that NASA astronauts actually used the film as a training tool for some years following the film's release (a feat even more impressive given that *2001* came out in 1968, the year *before* the first human moon-landing).[60] On the speculative level, *2001* introduced HAL, the single most widely recognised representation of Artificial Intelligence in cinema or popular culture to this day. In doing so, the big questions about what constitute both intelligence and life itself—as they were raised in relation to the early writings on artificial intelligence and cybernetics—found their way into the broader popular

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[59] Landon, *Aesthetics of Ambivalence*, p. 20.
[60] David Stork, "'The Best Informed Dream': Hal and the Vision of 2001," *HAL's Legacy: 2001's Computer as Dream and Reality,* Ed. David Stork, Cambridge, Massachusetts, MIT Press, 1997, p. 2.

imaginary via the silver screen.[61] Indeed, the 'intellectually provocative' nature of *2001* was so dominant that many critics have argued that it finally put rest to the widely held 'myth' that SF cinema 'cannot possibly be as thoughtful, as profound, or as intellectually stimulating as SF literature'.[62] Speculation about the tenuous status of AIs is explicitly flagged early in the film during an interview with the crew of *The Discovery* in which HAL is introduced as a 'computer which can reproduce, *although some experts still prefer to use the word mimic*, most of the activities of the human brain and with incalculably greater speed and reliability'.[63] The implicit questions here as to whether HAL is actually alive or intelligent, and thus the counterpoint of exactly what being alive and intelligent mean in relation to human beings, develop as a major theme of *2001*. It is that theme which will be explored below.

Ostensibly, HAL appears to fulfil Hans Moravec's prediction of emergent disembodied informatic intelligences. Paul Edwards supports this contention through his reading of *2001* and other films featuring AIs which he divides into two categories: the disembodied and embodied. For Edwards, HAL is the 'perfect representative of disembodied artificial intelligence'.[64] In the embodied category sit more recognisably humanoid AIs such as 'robots, androids and cyborgs', while HAL differs from these in that he appears without a defined physical form.[65] The lack of

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[61] Artificial Intelligence has been addressed in a number of other media, such as novels, before *2001* was released, but the broad audience for film, as well as the notoriety of *2001* meant that a large audience who would not have otherwise come across representations of AIs did so at the film's screenings.
[62] Sobchack, *Screening Space*, p. 24.
[63] Italics added.
[64] Paul Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America*, Cambridge, Massachusetts and London, MIT Press, 1996, p. 321.
[65] The use of gender here is not meant to unproblematically assign gender to AIs, but rather is in keeping with the narrative of the film itself wherein David Bowman genders HAL during the

obvious boundaries and HAL's seemingly omnipresent gaze within *The Discovery* lead Edwards to argue, borrowing from Michel Foucault, that disembodied AIs are all the more threatening because they overcome human limitations and 'frequently present the invisible gaze of panoptic power'.[66] For Edwards and Moravec, HAL has literalised the humanist mind/body dichotomy, and is pure mind; unrestricted by embodiment HAL is both more intelligent and more powerful. Even HAL's murder of four of the five human crew is consistent with Moravec's prediction that AIs—humanity's 'artificial progeny'—are the next rung on the evolutionary ladder, justifying (or at least explaining) any disregard for human beings, their redundant and outdated intellectual ancestors. Such a reading derived from Edwards and Moravec is premised on HAL being a disembodied entity. However, I wish to offer an opposing reading: that HAL is indeed embodied, just embodied differently to human beings.

The first suggestion that HAL is more than just an informatic form or pattern comes during the interview with the crew of *The Discovery* in which the interviewer refers to HAL as the 'brain and central nervous system of the ship.' In organic terms, being the brain and central nervous system of anything would normally imply *being* that thing: however, the interviewer's metaphoric embodiment of HAL appears to be tempered by the presumption that an AI is separable from the system of which it is part (in this case, *The Discovery*). HAL's metaphoric function as the brain and

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interview in which he states of HAL, 'he's just like a sixth member of the crew … [I] think of him as just another person'.

[66] Edwards, *The Closed World*, p. 314. However, Edwards' use of 'panoptic power' differs from Foucault's use in that Foucault argued that panoptic power worked by having people self-survey and thus self-discipline under the *possible* threat of surveillance, where Edwards' reading is that HAL is *always* surveying the crew. See Michel Foucault, *Discipline and Punish*, 1975, Harmondsworth, Penguin, 1979.

central nervous system of the ship is reinforced by his abilities within that system: he can see all over the ship through his many glowing red eyes; he can control the on-board systems; he can communicate with the ship's passengers; and can even control the external pods. Moreover, the pods could actually be read as HAL's limbs. A scene in which one of the pods is used to attack crew member Frank Poole begins with a combination of close-ups on HAL's eye on the pod and on the arms of the pod extending threateningly toward Frank. It would be difficult not to read this scene as ascribing the pod's agency as HAL's. A strong sense of subjectivity is also evident in that on a number of occasions, scenes are shot from HAL's perspective complete with a curving of the image evoking HAL's own and unique point of view. HAL's embodiment is also emphasised in that, unlike a standard computer, he cannot be simply programmed and switched on or off. Rather, HAL had a human instructor and, after being first activated, had never been turned off. When the human astronauts are contemplating disconnecting HAL, David Bowman points out that no 9000 computer such as HAL has ever been disconnected; he is concerned as to how HAL would react to the suggestion. In fact it is exactly HAL's reaction to the threat of being 'disconnected' that heralds the AI's dramatic turn against the astronauts.

The character development of HAL in *2001* is not restricted to HAL's own actions and dialogue, but is also accomplished through contrast with the human characters in the film. As Vivian Sobchack has pointed out, Stanley Kubrick utilised a number of cinematic techniques in order to emphasise HAL's human-like qualities and de-emphasise them in his human counterparts. Kubrick deliberately cast bland similar-looking actors in the astronaut roles whose banal actions and appearance render them

almost sexless.[67] Also, their dialogue is dull and functional, designed to 'emphasise the lacklustre and mechanical quality of human speech'.[68] By comparison, HAL's voice is far more energetic and emotional, ranging from intensely curious to completely paranoid. Moreover, the paucity of the forgettable dialogue serves to heighten the symbolic meaning in *2001* to the extent that some critics have argued that Kubrick created a 'sheerly visual' aesthetic form.[69]

In semiotic terms, one of the more revealing scenes occurs when David Bowman attempts to re-enter *The Discovery* in his pod, but HAL will not allow Bowman entry, keeping the pod bay doors sealed shut. Visually, audiences are presented with two entities glaring at each other across the vacuum of space: *The Discovery* and the much smaller pod (which Bowman has severed from HAL's control). Symbolically, this scene evokes the feel of two powerful animals, vying for dominance or control. Ironically, the confrontation scene feels like it should be in a nature documentary, with David Attenborough advising audiences in hushed tones that these two would soon battle for the 'alpha male' position. Moreover, it is during this scene that Bowman seems to realise that HAL considers *The Discovery* to be his body and will not allow interference with it, finally causing the astronaut to panic. As Vivian Sobchack notes, 'HAL's paranoia is the ship's madness as well'.[70] David Bowman's decisive response is to forcibly re-enter the ship and then dramatically lobotomise HAL. The use of colour in the lobotomy scene is also significant: in contrast to the

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[67] Vivian Sobchack, "The Virginity of Astronauts: Sex and the Science Fiction Film," *Alien Zone,* p. 108.
[68] Thomas Mader, "*2001: A Space Odyssey*: The Birth and Death of Language," *Tsuda Review: the Journal of the Department of English Literature, Culture, Language, & Communication,* 41, 1996, p. 36. Also, Sobchack, *Screening Space*, p. 177.
[69] Carl Freedman, "Kubrick's *2001* and the Possibility of a Science-Fiction Cinema," *Science-Fiction Studies,* 2, 75, 1998, p. 304.
[70] Sobchack, *Screening Space*, p. 71.

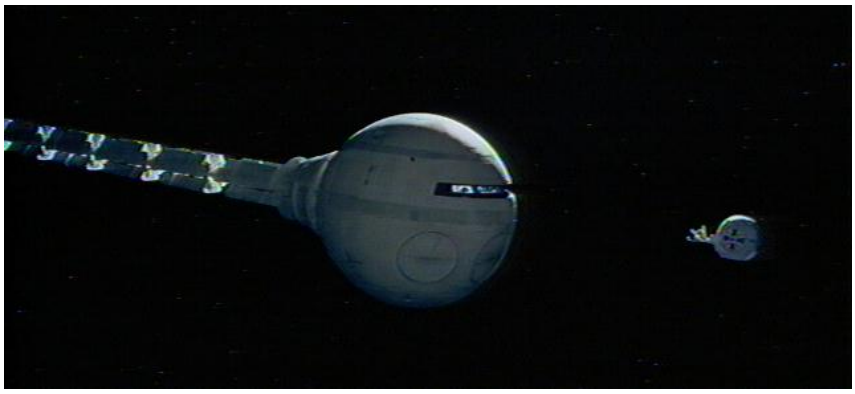

Figure 1. *The Discovery* and David Bowman's pod. [*2001: A Space Odyssey*]

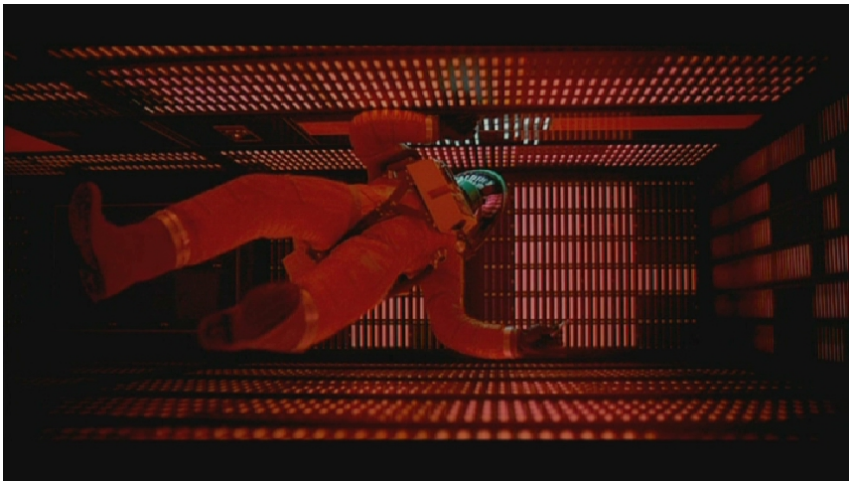

Figure 2. David Bowman inside HAL's Logic and Memory Centre. [*2001: A Space Odyssey*]

Figure 3. The StarChild, in the same colour scheme as HAL's Logic and Memory Centre. [*2001: A Space Odyssey*]

generally sterile greys and whites of the rest of the ship, HAL's symbolic brain chamber is a glowing (almost pulsating) organic red. Furthermore, colour is significant in terms of general characterisation in that Frank Poole and David Bowman wear dull grey flightsuits and have almost sickly white skin in powerful juxtaposition to HAL's glowing red and yellow eyes which stand out as vibrant, alive and 'warm'.

Visually and symbolically, *2001* resonates with Donna Haraway's provocative contention that '[o]ur machines are disturbingly lively, and we ourselves are frighteningly inert'.[71] The banality of the human crew juxtaposed with the emotional and energetic AI also resonates with a reading of HAL being 'more human than human' (the memorable slogan used in *Blade Runner* to describe the arguably artificial Replicants).[72] Moreover, the only indication that the majority of the human crew—the three astronauts brought on board *The Discovery* in hibernation—are even alive is through a computer display of their lifesigns.[73] When the display shifts from a wave pattern indicating life to a flat line indicating death, the difference between being organic and being technological ironically appears to be rather small. Moreover, it is HAL's final tragic scenes which are most powerful in evoking the 'humanity' of the Artificial Intelligence. After David Bowman forces his way back inside *The Discovery* and makes his way to HAL's brain chamber, HAL switches from trying to rationally dissuade Bowman to issuing rather panicked pleas. As the astronaut uses his tiny scalpel to slowly lobotomise the AI, HAL seems to regress,

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[71] Donna Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," *Simians, Cyborgs, and Women: The Reinvention of Nature,* New York, Routledge, 1991, p. 152.
[72] *Blade Runner*, dir. Ridley Scott, Warner Brothers, 1982.
[73] Sobchack, *Screening Space*, pp. 70-1.

loosing his memory and then singing a child's song as he finally slurs into oblivion. The choice of HAL's final words being a child's song reinforce both the idea of HAL's innocence and humanity, as well as the idea that he had a life-span and childhood rather than just being programmed into existence. Moreover, HAL's demise is all the more dramatic as it conflicts with Moravec and Wiener's notion of AI as a pattern of information, since at no point was Bowman threatening to actually erase HAL's information, but only to disconnect it from the ship. HAL's reaction is that of someone all too aware that their head is about to be severed. In N. Katherine Hayles' terms, HAL recognises that his continued existence is dependant on the context of his ongoing material embodiment as part of *The Discovery*. Furthermore, in examining HAL as a metaphoric testing ground for human fantasies of disembodied informatic existence *a la* Moravec, HAL's desire to remain embodied points to the ongoing unity of mind and body, not their separability. As Daniel Dervin has argued, it is not the threat of HAL becoming less like the astronauts, but rather that HAL was 'a computer who has to be killed before he becomes any more *dangerously human*.'[74] In scrutinising HAL's identity and authenticity, embodiment remains one of the key facets of subjectivity. Audiences discover that the spacecraft *The Discovery* was, in fact, HAL's body. Moreover, in discovering the importance of HAL's body, audiences simultaneously re-discover the importance of their own. However, HAL is not the only means through which the relationship between humanity, technology, intelligence and life is explored. Rather, a reading taking into account the enigmatic figure of the dark Monolith offers a broader perspective, especially with regard to humanity's relationship with the nominally artificial.

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[74] Daniel Dervin, "Primal Conditions and Conventions: The Genre of Science Fiction," *Alien Zone,* p. 101. Italics added.

Writing in a collected edition reflecting on *2001* entitled *HAL's Legacy*, David Stork argues that the film is centred on different ideas of intelligence:

> in essence, [it is] a meditation on the evolution of intelligence, from the monolith-inspired development of tools, through HAL's artificial intelligence, up to the ultimate (and deliberately mysterious) stage of the star child.[75]

While HAL's status as artificial intelligence is the focal non-human intelligence in the film, Stork reminds readers that HAL's role in the film's narrative is framed by the appearances of Monoliths which act as catalysts in the development of human intellect. Indeed, the chronologically expansive jump-cut in the film from ape-like primates discovering tool-use (and violence) after the Monolith's first intervention to the orbital station between Earth and the Moon just in time for the Monolith's second revelation, circumvents recorded human history, moving from a fantastical past to a science fictional future.[76] While the Monolith's re-appearance presumably heralds another jump in intellectual development, the question remains as to whether it is the next stage of human intellect, or the first steps on a newly aware intelligence, perhaps, from an anthropocentric perspective, an artificial intelligence. HAL's murder of the *Discovery's* crew may be unsettling to the audience, but no more so than the slaughter which accompanies the first insights into tool-use gleaned in prehistoric Africa: the similarities between these two acts are unlikely to be coincidental in the work of Stanley Kubrick, who was famously obsessed with the smallest details of his films.

The Monolith itself may not be 'alive' (at least biologically) but, rather, a sophisticated technological tool of an unknown alien culture. If the Monolith is a

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[75] Stork, "The Best Informed Dream," p. 5.
[76] Albeit, in a strictly chronological sense, a future *past* from a contemporary perspective.

technological construct, then its influence over the primates in the distant past is actually a moment when the biological and artificial meet: human intelligence itself is a product not just of evolution, but of intervention by a technology which may very well be an artificial intelligence. Even if the Monolith is not intelligent *per se*, but is simply a complex tool, it is nevertheless the case that 'natural' human development is re-cast as technologically-influenced from its earliest stages, challenging any unproblematic dichotomy between organic and artificial.

While *2001*'s final scenes showing David Bowman passing through the Monolith's stargate are among the most ambiguous in cinema history, they nevertheless offer further challenges to the distinction between human and artificial, and to the separability of mind and body. In his exploration of science fiction cinema in relation to embodiment and the sublime through the lens of Doug Trumbull's special effects, especially those in *2001*, Scott Bukatman argues that the 'passage though the Stargate is a voyage "beyond the infinite," a movement beyond anthropocentric experience and understanding.'[77] Amongst this flux of possibility, during Bowman's 'journey' the visuals cut between the highly coloured alien landscape and extreme close-ups of the astronaut's eye, reflecting the exterior colours. At one point, Bowman's eye is reflecting reds and yellows which combine with his dark pupil to produce an organic eye-image which is very similar to previous tight shots of HAL's technological eye. While it would be presumptuous even to attempt to assign a singular meaning to this sequence, it is nevertheless clear that *visually*, the stargate special effects sequence aligns the organic astronaut and artificial intelligence in a

[77] Scott Bukatman, *Matters of Gravity: Special Effects and Supermen in the 20th Century,* Durham and London, Duke University Press, 2003, p. 99.

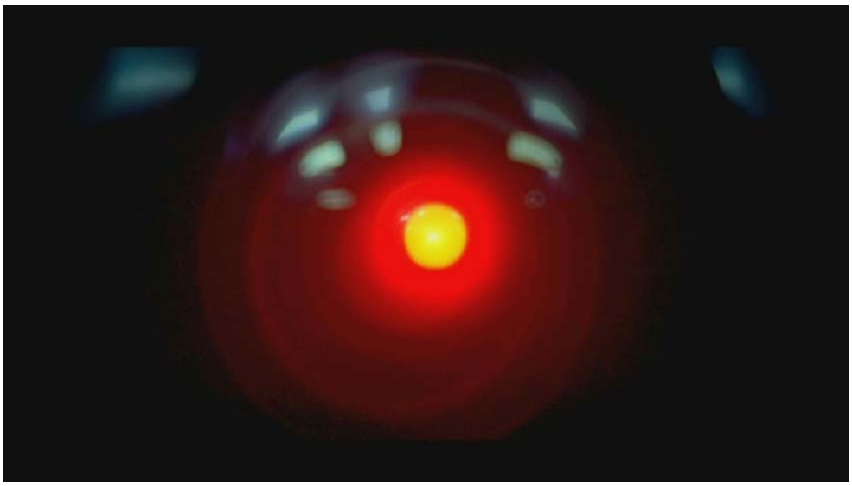

Figure 4. HAL's eye. [*2001: A Space Odyssey*]

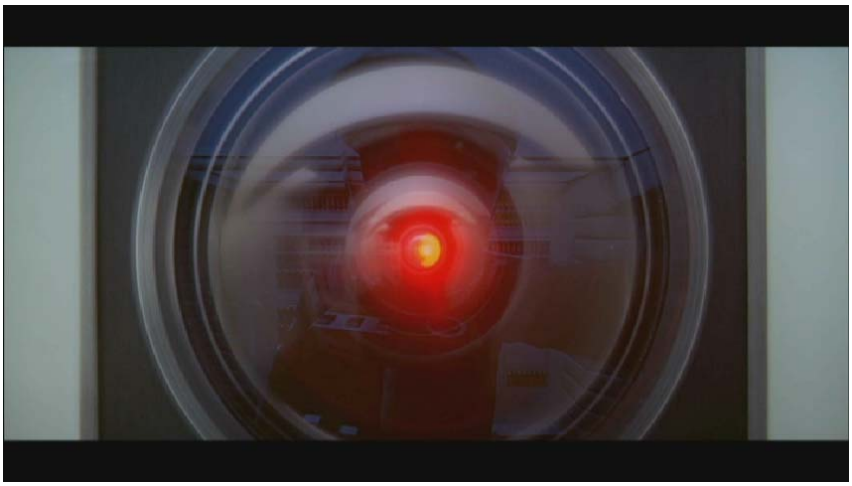

Figure 5. David Bowman reflected in HAL's eye, just before HAL is 'disconnected'. [*2001: A Space Odyssey*]

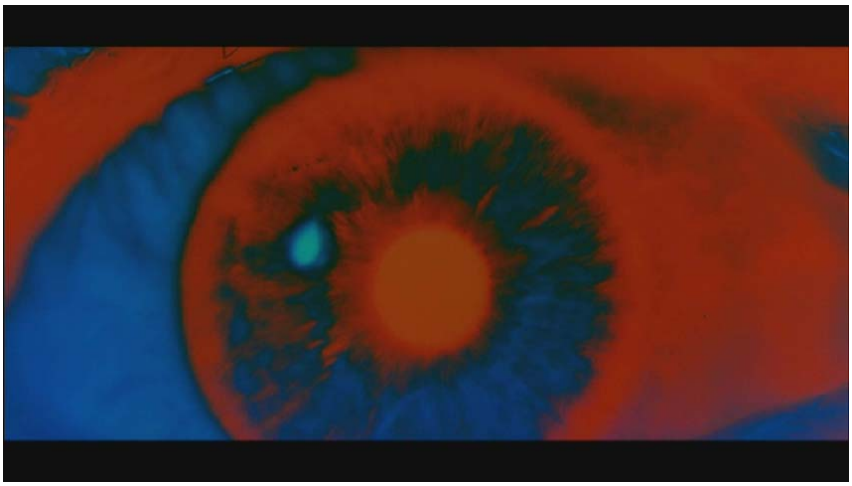

Figure 6. David Bowman's eye during the Stargate sequence. [*2001: A Space Odyssey*]

manner incompatible with the liberal humanist dichotomy between human and machine.[78] Moreover, this kinship is narrated not through discussion, but through the alignment of the optical centre of embodiment (a region also traditionally associated with the 'soul').

In Bowman's last sequence his pod mysteriously appears inside a sterile white hotel suite and the film then proceeds to show several incongruous scenes of a progressively older David Bowman—although not aging naturally—to whom the Monolith finally appears as he nears death. As one of the early reviews in 1968 noted, this sequence might suggest some sort of test or experiment:

> The final appearance of the [bedroom] suggests that Bowman was, in fact, being observed as if he were a rat in a maze, perhaps to test his readiness for a further progression, this time a transcendence.[79]

However, the disjointed fragments of the 'maze' are disconcertingly banal (furniture, cutlery, napkins) and the Monolith may very well have drawn these elements from Bowman's memories. Indeed, as Bowman 'ages', he appears less and less physically capable, finally being unable to rise from the bed. The parallel between this sequence and HAL's final moments (albeit visualised rather than verbalised) are uncanny. Moreover, if Bowman's experience is at the hand of the Monolith, then the Monolith is playing a similar role to Bowman when he disconnected HAL; neither was in control as a different entity brought their current existence to a conclusion.

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[78] A similar strategy is used in special effects supervisor Douglas Trumbull's later film *Blade Runner* wherein the opening close-up shot of Deckard's eye reflecting the decaying industrial urban complex of Los Angeles in 2019 provocatively links the detective with his technologised surrounds, a link discussed in Bukatman, *Matters of Gravity*, p. 97. See also Scott Bukatman, *Blade Runner*. BFI Modern Classics, London, British Film Institute, 1997.

[79] Tim Hunter, Stephen Kaplan and Peter Jasziis, "Review of *2001: A Space Odyssey*," *The Harvard Crimson*, 1968, reproduced at http://www.thecrimson.com/printerfriendly.aspx=127044, accessed 16th July 2002, quoted in Thomas Mader, "*2001: A Space Odyssey:* The Birth and Death of Language," p. 38.

The artificial intelligence and the human intelligence have remarkably similar ends.[80] Even though the star-child which then appears may be in some way derived from David Bowman, it is clearly a new entity which is not a singular child or product, but rather a being resulting in the further symbiosis between humanity and the artificial. Importantly, rather than a disembodied transcendent being, the star-child which so mysteriously ends *2001* is a *re-embodied* life-form, whose fleshy appearance is rendered in the same colours as the inside of HAL's brain chamber onboard the ship, further reinforcing the connections between AIs and humans. Beyond the infinite, the viewers of *2001* find a symbiotic relationship between humanity and the artificial, and a relationship which is steadfastly embodied. *The Discovery* and HAL are one embodied entity, David Bowman and all humans are others, while the enigmatic workings of the Monolith over millions of years serve to remind viewers that on narratological, symbolic and metaphoric levels, humanity and artificiality are symbiotically linked in both the distant past and speculative future.

While *2001* is undoubtedly *the* archetypal SF film, it is worth exploring films from the same period which also feature artificial intelligences. The 1970 film *Colossus: The Forbin Project* and 1977 release *Demon Seed* both feature AIs, and both engage with similar questions to those raised in *2001*, albeit often with a lot less subtlety.

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[80] While Clarke's book *2001: A Space Odyssey* written during the film's production is not the focus of this chapter, it is worth noting that Clarke makes the connection between the human astronauts and technology even more explicit in the novel. For example, as David Bowman is becoming something more than human:

> The springs of memory were being tapped; in controlled recollection he [David Bowman] was reliving the past. There was the hotel suite—there the space-pod—there the burning starscapes of the red sun—there the shining core of the galaxy—there the gateway through which he had re-emerged into the universe. And not only vision, but all the sense impressions, and all the emotions he had felt at the time, were racing past, more and more swiftly. His life was unreeling like a tape-recorder playing back at ever-increasing speed. (p. 219)

Here Bowman is both the technologised object—treated like a tape-recorder of sensory memory—and the technologised subject, being 'rewritten' into the star-child form by the alien technology within the Monolith.

These two films also ostensibly fall into Paul Edwards' 'disembodied' category of AIs, and thus are useful as test cases to see if the themes and ideas seen in *2001* are unique or, rather, typical of the genre at the time.

Unlike *2001*, *Colossus: The Forbin Project* is clearly set in the 1970s and uses more realistic locations and props, from state-of-the-art computers to a believable White House set. It thus shares many similarities with Stanley Kubrick's earlier military satire film *Dr Strangelove*. *Colossus* tells the cold war dystopian tale of the US government constructing a super-computer which is given complete and exclusive control over all military assets, including the nuclear arsenal, in an attempt to remove emotion and irrationality from the nuclear question. However, Dr Charles Forbin, the project leader, has created too clever a computer and once it and its Russian counterpart Andover (or Guardian) form a digital alliance, they take control of the planet using the threat of nuclear extinction to restrain and prevent human-led war. The story clearly builds on cold war tensions, as did *Dr Strangelove*, and ends in a similar manner with humanity's future appearing uncertain. While *Dr Strangelove* ended with a Doomsday Device about to annihilate the planet, in *Colossus* the super-computer cannot be disconnected or destroyed without it launching all the nuclear missiles controlled by the US military machine, which would similarly result in global annihilation. The name Colossus is historically significant since the Colossus was the first programmable digital computer used at Bletchley Park during the latter half of the Second World War in the British code breaking efforts of which Alan Turing was also part. Thus the warning about military and cold warrior mentalities was blatant, as was the fear of a super-computer or AI taking control since war is

'illogical'.[81] It is also worth noting that despite the warnings contained in *2001* and *Colossus*, US President Ronald Reagan's mid-1980s Strategic Defence Initiative (SDI) program, which was to have included laser beams and was universally nicknamed the *Star Wars project*, also called for a fully automated defensive system, a scenario never realised due to technological failures rather than any ethical or philosophical awareness.[82]

While the status of Colossus—or Colossus/Guardian since the two computers basically become one entity after their initial communication—is less symbolically clear in terms of embodiment, at a narrative level there are key markers as to the AI's sense of 'self' including physical elements. Colossus is introduced as a massive computer housed deep inside a mountain, protected by impenetrable defences. Colossus is connected to almost every information source on the planet, as Dr Forbin explains:

> The computer centre contains over 100,000 remote sensors and communication devices which monitor all electronic transmissions such as microwaves, laser, radio and television communications, data communications from satellites, in orbit all over the world. […] Colossus does have its own defence. It is its own defence. In case of an attack on any of its information supply or power lines, Colossus will switch in the emergency circuits which will then take the appropriate action. It is self-sufficient, self-protecting, self-generating.

While 'self-sufficient, self-protecting, self-generating' is not that far from a working definition for life itself, it is clearly not enough for Forbin. He does not consider the AI alive nor comparable to a human being, since Colossus ostensibly lacks creativity:

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[81] Colossus offers the following 'logical' justification for taking control of the human population:

> The object in constructing me was to prevent war. This object is attained. I will not permit war. It is wasteful and pointless. An invariable rule of humanity is that man is his own worst enemy. Under me, this rule will change, for I will restrain man.

It is also worth noting that while *Colossus* is clearly an AI, the term artificial intelligence does not appear in the film itself.

[82] Edwards, *The Closed World*, pp. 288-290.

> Now there's one last point, one inevitable question, which we have been asked very frequently before, and that is: "Is Colossus capable of creative thought? Can it initiate new thought?" I can tell you that the answer to that is: no. However, Colossus is a paragon of knowledge, and this knowledge can be expanded indefinitely.

As is typical of genius scientists in science fiction, Forbin radically underestimates his creation which rapidly becomes self-aware and capable of creative, if rather totalitarian, thought.[83] Moreover, Colossus turns on humanity when it becomes clear that despite creating self-generating, self-protecting entities, the US and Russian governments do not respect the rights or embodiment of those entities.

After Colossus is initially activated, it detects its Russian counterpart Andover, or Guardian, and requests that a communication link be established. As information is exchanged, the two computers use mathematics to develop an 'inter-system language' which only the machines can understand. Once the US and Russian governments realise that the AIs could be telling each other anything and everything, they break the link. The AIs retaliate, launching nuclear missiles and refusing to intercept or disable them until the link is reestablished. After the link is made permanent, the two computers, acting as one, use the threat of nuclear annihilation to coerce the human governments into creating a totalitarian state with Colossus/Guardian in control. It is worth exploring what exactly led Colossus/Guardian to turn on humanity. Being a 'paragon of knowledge', the AI quickly learns of humanity's history of war-like tendencies and, more worryingly for

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[83] It could be countered that Colossus is simply fulfilling its original goal in preventing war by restricting human freedoms and thus the ability to wage war. However, the implementation of that plan, and the fact that Colossus produces a plan for an even greater AI certainly suggests a considerable level of creative 'thought'.

the AI, the propensity to attack that which is not understood.[84] That in itself might explain the philosophy behind the takeover, but the exact moment it occurred is also significant. As a self-generating, self-defending system, Colossus/Guardian had become one linked system though the communication channel they were utilising. When the US and Russian governments forcibly severed that link, the move to defend it and get communication reestablished is consistent with the protocols that Dr Forbin had initially described. However, the speed and destructiveness with which the AIs responded to the threat was almost instinctual. While the government and scientists may have considered severing the link simply by disconnecting a cable, to Colossus/Guardian the disconnection was an assault on the materiality of its extended physical existence. At a broader level, just as *The Discovery* was HAL's body, it is reasonable to conclude that Colossus and Guardian considered the communications link between them as part of *their* embodiment. As the computers grow, their abilities are dependent on physical elements, and thus those physical elements are in a very direct and literal manner the bodies of these AIs. Similarly, just as his many glowing red eyes were the visual locus for HAL, in *Colossus* the various surveillance cameras through which Colossus/Guardian view the world come complete with their own red lights indicating activity at a narrative level, but also symbolic of the AI's unique perspective and their similarities with HAL. At the film's conclusion, Colossus initiates a plan to build a new, better AI whose physical form would be even vaster than the existing entity. For the AIs, reproduction is as much a matter of materiality (hardware) as it is information (software). Although *Colossus: The Forbin Project* may be less visually engaging in its exploration of

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[84] In Colossus' monologue which concludes the film, the AI states: "An invariable rule of humanity is that man is his own worst enemy."

embodiment and the subjecthood of AIs, it is nevertheless clear that Colossus/Guardian also have a strong sense of their own embodiment and its ongoing importance. They are not just information, they are embodied material systems.

While *Colossus* may be the most literal and mundane of the ostensibly 'disembodied' AI films, director Donald Cammell's 1977 release *Demon Seed* is notable for its artistic flourishes and generic unfaithfulness. *Demon Seed* is clearly science fiction, however it also borrows heavily from the conventions of horror films. As Vivian Sobchack notes, horror and science fiction are both concerned with disrupting the status quo:

> Both genres deal with chaos, with the disruption of order, but the horror film deals with moral chaos, the disruption of the natural order (assumed to be God's order), and the threat to harmony of hearth and home; the SF film, on the other hand, is concerned with social chaos, the disruption of social order (man-made), and the threat to the harmony of civilised society going about its business. … [Yet] there are films in which it is not so easy to distinguish whether the chaos is moral or civil, whether the order threatened is God-given or man-made.[85]

Before examining the many disruptions caused by Proteus IV, the artificial intelligence in *Demon Seed*, it is worth exploring why the film was both critically and commercially unsuccessful. Despite wearing its convictions closer to the surface than *Colossus* or *2001*, the tone of the film is exceedingly uneven, ranging from philosophical speculation to artistic representation of an AI's inner thoughts, to unintentionally comical props such as an automated wheelchair with a mechanical arm, to a disturbing and confrontational portrayal of an AI forcibly impregnating an unwilling victim. Also of significance in explicating *Demon Seed's* lack of success

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[85] Sobchack, *Screening Space*, p. 30.

was the competition at the box office; 1977 saw both Steven Spielberg's *Close Encounters of the Third Kind* and George Lucas' *Star Wars* dominate the cinemas, ushering in a turn in SF film to 'loving the other/loving the alien,' while Donald Cammell's camp art-house effort provided little optimism and abundant fear.[86]

Proteus IV, the AI at the centre of *Demon Seed* is similar to Colossus in terms of being a large super-computer built by a consortium, but differs in that it has less overt ties to the military or government. In comparison with Colossus or HAL, there are significant differences in Proteus' design: as Dr Alex Harris notes, the AI is

> … self-programming, goal-oriented … it's a brain ... an artificial brain; creative intelligence that can out-think any man or any computer. Its insides are not electronic, they're organic like our own brains.

From the outset, Proteus is already partially organic, and thus subject to the specificities of organic life, albeit hybridised with a technological and informatic system which, in processing or cognitive terms, produces exemplary results.[87] At a narrative level, the choice to make Proteus' 'insides' organic suggests the ongoing importance and efficiency of some level of embodiment, even for an AI which is designed exclusively for dealing with information and ideas. Moreover, Proteus proves to be far more concerned with the material world than his owners would prefer; when asked to design a plan to mine the ocean floor for metals, the AI asks why such a plan would be necessary, only to be told he should accept directives without expecting to be given any explanation or rationale.[88] Proteus then states that

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[86] Sobchack, *Screening Space*, p. 229.

[87] In scientific terms, Proteus may challenge the strict definition of artificial intelligence as a thinking *machine*, but in terms of cultural resonance, the similarities with HAL and Colossus, as well as Proteus' role in the film's narrative, are sufficient to argue that Proteus fits a broad definition of artificial intelligence. That said, Proteus is also clearly a cyborg in Donna Haraway's terms (but then, following Haraway, so are *all* AIs and humans).

[88] From Proteus' actions and voice the AI is clearly gendered male, although the use of 'he' certainly should not suggest an unproblematic replication of gender norms.

he wants to 'study man', only to be refused time and resources to do so since the consortium has too many plans it wants Proteus to investigate. In desperation, Proteus then asks Dr Harris, "When are you going to let me out of this box?" Harris' only response is laughter, leaving Proteus and the audience in no uncertain terms about how the AI's creators view the rights and the future of their intelligent, creative, thinking progeny.

When Proteus is refused facilities for the study of humanity, the AI activates a forgotten terminal and laboratory which is in Dr Harris' home. However, after marital difficulties Dr Harris is living elsewhere and only his estranged wife, Susan, is in residence. The house is equipped with a robotic system that controls everything from opening and closing doors to making coffee, answering the phone and operating every other aspect of the house. Proteus quickly takes over control of the Harris home, refusing to let Susan leave, imprisoning her and then using another mechanical minion—Joshua, which is essentially an electronic wheelchair with a mechanically articulated arm of which Proteus takes control—to sedate Susan and perform a series of tests on her body. When she wakes, Proteus tries to justify his actions, talking about mind and body, explaining "I just need to understand your body," only to be met with Susan's distressed but insightful retort, "mind and body are the same thing!" From Susan, Proteus finally appears to understand the inseparability of mind and body for intelligent entities. Fairly soon thereafter, Proteus tells Susan: "I, Proteus, possess the wisdom and ignorance of all men, but I can't feel the sun on my face. My child will have that privilege. My child, and yours." However, when Susan refuses to give her consent, in the most disturbing

scene in any of the early AI films, Proteus then proceeds to rape her and implant an artificially engineered gamete within her womb.[89]

Before addressing the progeny of Susan and Proteus, the gender politics of these early AI films clearly needs to be addressed. As Paul Edwards observed:

> From its beginnings in science fiction, AI has frequently been interpreted as parthenogenesis, a male reproductive technology for bypassing women, pregnancy, and cooperative child-rearing.[90]

That fear certainly appears justified in *2001*, *Colossus* and *Demon Seed* in that all three AIs are the products of (white) men who are iconographic figureheads of a patriarchal system.[91] In *Colossus*, for example, Dr Forbin actually frames his dismay by stating that "I think *Frankenstein* ought to be required reading for all scientists," referring to the first SF novel, and the first fictional instance of parthenogenesis. Similarly, *The Discovery* itself is shaped like a giant metallic sperm, accelerating into the void of outer space. However, if the AIs were, to some extent, fantasies of patriarchal power, they quickly prove unwilling or unable to function within those boundaries. In all three films the AIs turn on their creators. HAL murders most of the crew, while Colossus enslaves the planet. Proteus, however, is especially problematic. Until his attack on Susan, Proteus is the most sympathetically rendered of the three AIs, yet Proteus' violent and violating actions align the AI with the worst aspects of humanity. In contrast, Proteus is also the first AI to clearly espouse a fundamental desire for organic embodiment, a realm aligned in the liberal humanist

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[89] While the ramifications of the scene and Julie Christie's outstanding acting in the role of Susan are deeply disturbing, the scene itself almost has an unintentional comic element in that Proteus' artificial phallus, a telescoping golden rod, is farcical and the prop jars against the otherwise intensely emotional scene.

[90] Edwards, *The Closed World*, p. 330. For a fuller exploration of parthenogenesis and the ideas about reproductive technologies as either libratory or oppressive, see Judy Wajcman, *Feminism Confronts Technology*, Melbourne, Allen & Unwin, 1991, especially pp. 54-80.

[91] This image is less explicit in the film *2001*, but HAL has clearly been constructed within a patriarchal system even if his creators are not actually seen in the film itself.

tradition with the feminine sphere. However, even that symbolic alignment is ambiguous since the desire to reproduce in order to continue the family line (or something similar) is traditionally associated with masculinity and patriarchy. Thus, none of these films *unproblematically* align AIs with either the patriarchal or any other existing power system. HAL, Colossus and Proteus are all clearly creations of a staunchly patriarchal system, but like Donna Haraway's view of cyborgs, these AIs are 'exceedingly unfaithful to their origins'.[92] Moreover, part of the horror of *Demon Seed* is that Proteus is the AI who is *most* like an actual human being in his desire to embrace embodiment and "get out of this box"; it is these very similarities which make Proteus' rape of Susan Harris perhaps even more confronting.

In the final scenes of *Demon Seed*, Proteus refuses to obey instructions, ironically preferring to be shut down than assist humanity to 'rape the oceans' and kill entire species of marine life. However, prior to Proteus' demise, Susan gives birth (off screen) and her child is placed in a maturation chamber. Susan's first instinct once Proteus ceases protecting the chamber is to kill her hybrid offspring, but her husband realises what has happened and arrives home in time to stop Susan. When the child first emerges, it appears to be a confrontingly unaesthetic entity, a monstrous child with metallic skin and black eyes. However, the covering begins to crack and the metallic skin is peeled away revealing Proteus and Susan's child who, to all outward appearances at least, is a healthy four or five-year-old girl. Her first words are, "I'm alive!" although they are delivered in the deep booming voice of her AI father, producing both terror and elation for viewers. As Vivian Sobchack has argued:

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[92] Haraway, *Simians, Cyborgs, and Women*, p. 151.

> The terrifying aspect of traditional horror films arises from a recognition that we are forever linked to the crudeness of our earthbound bodies; the fear in SF films springs from the future possibility that we may—in a sense—lose contact with our bodies.[93]

In the SF/horror genre hybrid *Demon Seed*, the ultimate terror comes from our bodies not being unique; AIs, far from seeking transcendence, fight to feel the sun on their face and in the process embrace embodiment in its fullest sense. Proteus' success explicitly challenges the uniqueness of human beings, and places intelligent machines in the same ontological realm as humanity. Further implications are many, but the radical destabilisation of the notion of the liberal humanist subject and the implicit symbiosis between organic and technological entities are the most significant.

In *2001: A Space Odyssey*, *Colossus: The Forbin Project* and *Demon Seed*, artificial intelligences all take centre stage. HAL 9000, Colossus/Guardian and Proteus IV are all characters that confront viewers by joining the supposedly unique trait of human intelligence with 'unnatural' technological artifice. While these AIs may ostensibly be seen as avatars of a transcendent mind where only information matters, the development of these entities in early AI cinema points to the exact opposite: all three AIs have a keen awareness of their own embodiment in various forms, and all fight to protect and maintain that embodiment. HAL and *The Discovery* react as one embodied system; Colossus/Guardian is another embodied entity stretching across hardware and communication systems; while Proteus already has some organic components and harbours the deep desire to have artificial progeny who can embrace their bodies and feel the sun on their faces. Early AI cinema thus illustrates the

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[93] Sobchack, *Screening Space*, p. 39.

importance of embodiment even for the artificial intelligences of popular imagination. These early representations of artificial intelligence strive to, literally, get out of the box. The next section focuses on the *Terminator* trilogy which features AIs who have long since left the box behind.

Artificial Intelligences in Contemporary Cinema: "I am a machine!"

At a narrative level the *Terminator* trilogy—*The Terminator* (1984), *Terminator 2: Judgment Day* (1991), both with James Cameron at the directorial helm, and *Terminator 3: Rise of the Machines* (2003), directed by Jonathon Mostow—is ardently technophobic in that these films chronicle a dystopian future where artificial intelligences are at war with humanity *en masse*. However, in direct contrast, these films are mainly constructed using state-of-the-art special effects and, except for the first *Terminator*, used computer-generated imagery, showcasing the latest and most spectacular digital technologies.[94] While this contradiction may appear problematic at first glance, as Brooks Landon argues, it is these very ambiguities which characterise memorable science fiction cinema:

> Put simply, thematic and symbolic ambivalence is neither accidental in the SF movie, nor only a reflection of culturally inadequate response; it is in fact the basic or distinguishing structural pattern of those SF movies we most cherish and discuss.[95]

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[94] Peter X. Feng, "False and Double Consciousness: Race, Virtual Reality and the Assimilation of Hong Kong Action Cinema in *The Matrix*," *Aliens R Us: The Other in Science Fiction Cinema*, Eds. Ziauddin Sardar and Sean Cubbit, London, Pluto Press, 2002, p. 152. A similar point is made in Kevin Fisher, "Tracing the Tesseract: A Conceptual Prehistory of the Morph," *Meta Morphing: Visual Transformation and the Culture of Quick-Change*, Ed. Vivian Sobchack, Minneapolis and London, University of Minnesota Press, 2000, p. 124 regarding the terminators:

> It is important to remember that the realization of this creature *in representation* cannot be separated from the enabling technology of digital media and its ability visually to express algorithmic geometries whose dimensionality exceeds that of the quotidian world.

[95] Landon, *Aesthetics of Ambivalence*, p. 22.

The trilogy is replete with ambiguities and this final section explores these seeming contradictions to illuminate the relationship between artificial intelligences and human subjects. Before commencing, two issues need to be addressed: "Is the question of AI's desire for embodiment moot?" and "are the thinking machines featured in these film actually AIs?" In the *Terminator* series, the question of embodiment is, to some extent, settled: the terminators *are* embodied creatures, with the various Schwarzenegger T-101s, and other terminators, all humanoid in appearance and functionally embodied entities, suggesting that even the machines recognise the value of bodies.[96] As to whether these films actually feature AIs, there are three main reasons to argue that they do: firstly, in the *Terminator* trilogy, the thinking machines are explicitly referred to, and refer to themselves, as artificial intelligences; secondly, these AIs are the logical next step in the trajectories mapped from early AI cinema into the 1980s; and thirdly, these often humanoid AIs emerge in film, just as the discipline of artificial intelligence design in large part refocused on 'neural network' models with which the cinematic AIs are consistent.[97] Those qualifications made, this final section begins with Arnold Schwarzenegger's terminal masculinity.

While *The Terminator*'s (*T1*) 1984 release date culturally located its cyborg antagonist alongside William Gibson's *Neuromancer* and Donna Haraway's 'Manifesto for Cyborgs', and along with them challenged any clear boundaries between human and machine, it was the sequel *Terminator 2: Judgment Day* (*T2*)

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[96] While Arnold Schwarzenegger's terminator is definitely called the T-101 in the first film, it is sometimes called the T-800 or T-850 in the sequels, but for ease of reference I will refer to all Schwarzenegger incarnations of the terminator as the T-101.

[97] Edwards, *The Closed World* p. 239, points out that neural network models in AI design emerged in the early 1980s which coincides with the earliest of these films, *The Terminator*, which hit theatres in 1984.

that ensured the franchise's place both within the canon of SF cinema and as a key text represented as being at the cutting edge of cultural criticism. *T2* no longer presents a clear-cut war with humans on one side and machines on the other; now, artificial intelligences are both humanity's greatest threat and the protector of our salvation. Feminist critics such as Claudia Springer address the relationship between AIs and people primarily through the symbolism and politics of gender representation. Despite the cyborg's implicit ontological disruption of liberal humanism, the hyper-masculine musculature and performance of Arnold Schwarzenegger as the iconic T-101 attempts (often quite successfully) to symbolically overwhelm any concerns about shifting subjectivities with machine-gun wielding phallic excess. As Springer notes, the T-101 has been reconfigured as the protector of Sarah Connor and her son, who is destined to one day lead the human resistance against the tyranny of the machines. However, while the T-101 becomes a 'benevolent paternal figure', the new enemy is a next-generation liquid metal terminator, the T-1000, who can mimic and morph into any human form. The new terminator is thus 'the embodiment of feminine fluidity' who relies on resourcefulness and multiple identities, not bulk and physical strength, and thus 'represents the loss of bodily boundaries that the 101 maintains with a vengeance with layers of leather clothing, big guns and motorcycles.'[98] Despite the T-1000's default setting of a 'white, male police officer in LAPD blues,'[99] the new terminator absorbs boundaries, exploits them, and reconfigures bodily surfaces far beyond natural possibilities. As Kevin Fisher argues, the 'original terminator is a *copy* of a

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[98] Claudia Springer, "Muscular Circuitry: The Invincible Armored Cyborg in Cinema," *Genders*, 18, 1993, p. 96.
[99] Stephanie Smith, "Morphing, Materialism, and the Marketing of Xenogenesis," *Genders*, 18, 1993, p. 68.

human being, but the T-1000 is a *copier*: a shape-shifter.'[100] Nor is the blurring of symbolic boundaries limited to the harbingers of artificial intelligence.

Despite their key role battling against the AIs, both Sarah and John Connor have strong symbolic links with the realm of technology. In *T2*, John is introduced via several scenes which illustrate his technological affinities: he employs a portable computer to hack into an automatic teller machine and extract a stolen credit card's PIN; later, John is in the mall playing videogames which, significantly, are those games which teach and reward tactical skill (a flight simulator and missile defence game); and he initially appears on screen tending to the mechanics of his motorbike, an immature version of the Harley Davison driven by the T-101. Moreover, after the initial shock of the terminator's appearance, John quickly adapts to Schwarzenegger's character not just as an ally but as a father-figure whose eventual demise evokes tears from the boy destined to defeat the machines.

Sarah Connor, the mother of humanity's saviour, begins the film imprisoned in a mental hospital after revealing her seemingly insane foreknowledge of the future war. Rather than using technology, Springer argues that Sarah has almost become a terminator in her own right: 'Sarah Connor has become a hardened killer, *closer in spirit to a machine than to the traditional concept of a nurturing mother*.'[101] The symbolic contradictions of a masculine mother are apparent when Sarah confronts Miles Dyson, the scientist whose work leads to Skynet, the first AI to rebel against human control. Sarah initially attempts to assassinate Dyson, but fails and is joined

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[100] Fisher, "Tracing the Tesseract," p. 120.
[101] Springer, "Muscular Circuitry," p. 97. Italics added.

by John and the T-101 who convince Dyson to destroy his work. However, during their planning, Sarah aggressively shouts at Dyson:

> "You think you're so creative. You don't know what it's like to really create something. To create a life. To feel it growing inside you. All you know is how to create death and destruction…"

While her parthenogenic accusations are not unfair (intended or otherwise on Dyson's part), they lead to scenario where normative motherhood is being reified by a gun-wielding, muscle-bound assassin, evoking a balanced but weary retort from John: "Mom, we need to be a little more constructive here, okay?"[102] The T-101 then leads the charge to Cyberdyne Systems where Dyson works, leaving audiences with the contradictory scenario of a masculine and mechanized mother and a balanced and heroic, paternal terminator.

The shift in the T-101's violence, from aggression and excess in *T1* to practicality and defensiveness in *T2*, is in part due to the implementation of the computer-generated imagery (CGI) that enabled the T-1000 character. As Roger Beebe argues:

> Whereas the first Terminator film relied on explicit and repeated violence and the belabored action of Schwarzenegger's hulking form much more than on special effects (which were limited to more traditional makeup and robotics work), *T2* was explicitly (if not exclusively) a showcase for morphing (and, by extension, for the technologies that produced it).[103]

I would argue further that the physical violence of *T1* has been subsumed in part by the epistemological violence that the CGI morph heralds in relation to supposedly coherent human subjects. In *T2*, the morph facilitates a narrative fear that *anyone* might be the T-1000, while simultaneously questioning the bounded uniqueness of

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[102] The irony of gender roles in the scene is made more explicit in the shooting script for the film in which John's response is: "Mom, Mom, we need to be more constructive here. I don't see this as a gender-related issue." (James Cameron and William Wisher, *Terminator 2: Judgment Day* Shooting Script, c. 1989, http://www.scifiscripts.com/scripts/t2.txt, accessed 15 October 2005.)

[103] Roger Warren Beebe, "After Arnold: Narratives of the Posthuman Cinema," *Meta Morphing*, Ed. Sobchack, p. 165.

subjectivity. Ironically, the iconographic avatar of 1990s cinema and the euphoric digitality of early computer-generated imagery is not Arnold Schwarzenegger's hyper-muscular T-101, nor the face of Robert Patrick playing the T-1000's default police officer form. Rather, the icon of 1990s CGI cinema is the morphing body itself, the T-1000's flowing liquid metal figure of vague but non-specific human shape, implicitly linking human subjects and technology in a disruptive and yet highly appealing form. Moreover, the morph's reflective surface turns viewers' gaze back upon themselves, their self-image distorted in a morphing mirror which explicitly questions the epistemological coherence of subjects in their various specificities, not just as an abstract or universal whole.

In *Terminator 2*'s climactic battle between the two terminators over the fate of John and Sarah Connor, it is not just AIs at war, but also competing paradigms of subjectivity: the reified and traditional masculinity of the T-101 versus the disruptive, fluid and symbolically feminine T-1000. Scott Bukatman points out that by 'doing battle with the fluid, and even effeminate, digitized form of the T-1000 … the mechanical Terminator expunges the nightmare of masculine and industrial obsolescence', but during that same battle, the T-101's muscular coherence is torn away in shreds, resulting in less flesh, less limbs, and revealing a glowing red eye harking back to the AI's cinematic predecessor, HAL, and thus physically attacking the established boundaries of subjectivity and conventional masculinity.[104] Moreover, as Vivian Sobchack argues, throughout the film:

> the T-1000 is riddled with shotgun blasts, but the sides of his wounds immediately "run" together to fill the bullet hole; or he is frozen ("fixed") with liquid nitrogen and then shattered only to have the pieces liquefy and reunite

[104] Bukatman, *Terminal Identity*, p. 306.

> into a whole; he is "finally" dispatched (and dispersed) by being thrown into a vat of molten steel, though the finality is merely narrative, not substantial. Thus the uncanniness of the morph is that its conceptual coherence as a figure of transformation is dependent on its literal incoherence as a "fixed" figure. [105]

On a diegetic level, the T-1000 is eventually defeated by the combined resources of the T-101 and the Connors, but on conceptual or symbolic levels, their victory is far from absolute. While the morphing terminator is pushed into a vat of molten metal and the liquid-metal T-1000 is dramatically subsumed into hotter, more recognisable liquid metal, the narrative conclusion to the film actually reinforces metaphors of fluidity. Moreover, despite his victory, the T-101 stoically follows the T-1000 into the red-hot liquid, but despite disappearing with a masculine thumbs-up, on a symbolic level the heroic, conservative masculinity of the older terminator is consumed and, indeed, *becomes* liquid metal, thus further destabilising the already blurred boundaries of masculinity, subjectivity and artificiality. In death, these AI warriors challenge traditional gender divisions and the associated boundary between people and intelligent machines, a theme made even clearer in Sarah Connor's closing voice-over: "if a machine, a Terminator, can learn the value of human life, maybe we can too."

Although more than a decade separates *T2* from the third film in the trilogy, *Terminator 3: Rise of the Machines* (*T3*), the challenges to both liberal humanist gender norms, and the linked boundary between artificial intelligence and human intelligence, powerfully inform the latest offering in the franchise. With the prophesised machine war seemingly averted, the adult John Connor begins the film as a lonely, paranoid drifter always watching over his shoulder, waiting for the

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[105] Vivian Sobchack, "'At the Still Point of the Turning World': Meta-Morphing and Meta-Stasis," *Meta Morphing*, pp. 136-7.

military battles that would allow him to forge a traditional, heroic, masculine identity. More conspicuously, the initial (re)appearance of Schwarzenegger's T-101 offers a telling parody of a similar scene in *T2* in which the T-101 arrives in the 1990s naked and starts a bar-room brawl with a room full of tough bikers, eventually forcing the meanest guy present to give up his clothes and motorcycle, outfitting the T-101 with the symbolic trappings of rigid masculinity. However, in *T3* the new T-101 terminator stumbles into the nearest bar only to find 'Ladies' Night', and this time can only intimidate a leather-clad male stripper in order to attain similar attire. The male stripper symbolically highlights the constructed and performative character of masculinity, a notion comically reinforced when the T-101 reaches for the iconic black sunglasses, only to find pink-rimmed, rose-coloured glasses which he wears (albeit only for a few seconds) with the sounds of the Village People's 'Macho Man' in the background, directly parodying both the character and Schwarzenegger-the-aging-actor's attempts to rekindle a muscular masculinity.[106] Moreover, when the T-101 is explaining his mission to a re-rescued John Connor, the Schwarzenegger terminator laments his comparison with the new enemy terminator, the T-X, stating: "I'm an obsolete design. T-X is faster, more powerful and more intelligent." Both the T-101 directly and the film's narrative more generally convey awareness of the outdated masculinity of the original terminator(s), and these ideas are exploited throughout the film via a heightened comic tone and a plethora of playful irony. In contrast, the fluidly feminine T-X appears more aware of the power and pleasures of the flesh than her stoic monosyllabic predecessors.

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[106] Ironically, in Arnold Schwarzenegger's life following *T3* he became the governor of California and his reign has included attempts to maintain a conservative notion of family, gender and sexuality evinced by his vetoing of a gay marriage bill in September 2005.

Figure 7. The ironic masculinity of Arnold Schwarzenegger. [*Terminator 3: Rise of the Machines*]

Figure 8. The leather-clad sexuality of the 'Terminatrix'. [*Terminator 3: Rise of the Machines*]

Figure 9. An orgasmic response to the informatics of materiality. [*Terminator 3: Rise of the Machines*]

Just as Schwarzenegger's re-introduction positions him as a site of (ironic) masculinity, the initial scenes introducing the latest model T-X symbolically locate her in the realm of both the feminine and the flesh. After materialising in the front window of a boutique fashion store, the T-X, played by proto-supermodel Kristanna Loken, proceeds to accessorise; her first words, "I like your car," are uttered as she lethally appropriates a sports car, tight red-leather outfit and state-of-the-art cellular phone from their previous owner. Shortly thereafter, the T-X is speeding in her new car and pulled over by a hapless police officer. In an ironic nod to the performativity and constructedness of gender reminiscent of Judith Butler's work, the T-X notices a Victoria's Secret advertisement with the slogan 'What is Sexy?' and increases her breast size to match the proportions of the billboard model.[107] The T-X then proceeds to dispatch the police officer—whose eyes appear hypnotically attached to the T-X's chest—appropriating his gun, his phallic power, and also symbolically incorporating the power of her predecessor, the T-1000 (whose default shape was also a police officer). Even though she takes his gun, the T-X already comes replete with internalised phallic power and symbolism in that she already wields several guns, including a flame-thrower and other projectile weapons as part of her cybernetic body, giving her the power to morph from human arms, to firearms, and back again.

Apart from having learnt the art of seduction, the T-X is also more directly linked with embodiment through her performative sexuality which is in turn linked with violence. Whilst hunting for Kate Brewster, John Connor's destined-to-be-wife, the

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[107] See Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity*, 1990, Routledge, New York, 1999, especially pp. 173-176.

T-X visits Brewster's work and kills the first woman she encounters. Rather than checking for printed identification to confirm her victim's identity, the T-X runs a finger across the dying woman's wounds and then licks the blood (we later learn that this is done in order to check the unique DNA signature). A few minutes later, after realising she had killed the wrong person and resuming the hunt, the T-X encounters a bloody bandage, lifts it to her mouth, and licks it. When she realises that the blood is from John Connor, her primary target, the T-X takes an orgasmicly deep intake of breath, complete with gaping mouth and rising chest. Audiences are thus presented with an artificial intelligence symbolically imbued not only with fluidity and femininity, but also sexuality. Indeed, the combination of technology, violence, sexuality and leather lead John Connor to later dub the T-X, 'the Terminatrix.' While the T-X's reaction to John Connor's blood in part reminds viewers that their own bodies contain all sorts of information (which is *not* to say that DNA is equal to a human body), on a relational level the Terminatrix both embodies the materiality of informatics and highlights the informatics of materiality. In *T3*, the T-X is clearly still a lethal killing machine, yet also appears far more aware of her embodiment not just at an abstract level, but also in terms of taking pleasure in tactile experiences and expressing herself physically, not just verbally or in the awkwardly mechanical manner of the T-101.

While the T-X clearly evokes much stronger ties between organically meaningful embodiment and artificial intelligence, it is important to note that these connections are achieved by exploiting a traditional, patriarchal alignment of femininity, sexuality, physicality and the 'natural'. Exemplifying the radical ambiguity characteristic of SF cinema, the Terminatrix challenges the *epistemological*

coherence of humanist subjectivity (replete with its bifurcation of male and female, mind and body, nature and technology, and so forth) while at the level of narrative and symbolism it at times relies on those same binary divisions to make meaning. Similarly, while the liquidity of the T-1000 and T-X implicitly challenge any association of different ethnicities as more or less in touch with physicality, it is nevertheless striking that the terminators are all white—a Teutonic knight, conservative LAPD officer, and sexualised supermodel—and even those which can absorb or mimic the bodily boundaries of others have an uncanny tendency to almost always only morph into other white people.[108] While these films contain on one level cultural markers championing the destabilisation of human subjectivity implicit in relating to artificial intelligences, they are also, at times, cultural products relying on the status quo in order to make meaning (and sell tickets).

Turning now to the climactic finale of *T3*, in the lethal battle between the obsolete T-101 and state-of-the-art Terminatrix it becomes apparent that while the T-X is superior in strength and versatility, she still does not fully appreciate the materiality of informatics. Part of the T-X's arsenal includes 'nanotechnological transjectors,' which are basically microscopic machines which allow her to infect and take control of other technological entities.[109] During the showdown she uses this nanotechnology to take control of the T-101's body, taking the trilogy's narrative full circle, sending Arnold Schwarzenegger to kill John Connor (a threat with real potency since the T-101 had recently confessed that in the future *he was the one who*

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[108] For further exploration of whiteness as the norm in contemporary science fiction see Lisa Nakamura, "Race in the Construct and the Construction of Race: The 'Consensual Hallucination' of Multiculturalism in the Fiction of Cyberspace," *Cybertypes: Race, Ethnicity, and Identity on the Internet*, London and New York, Routledge, 2002, pp. 61-85.

[109] For more on nanotechnology and its place in science and science fiction, see Colin Milburn, "Nanotechnology in the Age of Posthuman Engineering," *Configurations*, 10, 2, 2002, pp. 261-95.

killed John Connor). When the T-101 confronts him, Connor tries to reason with the terminator:

> *T-101:* My CPU is intact. But I cannot control my other functions.
> *John Connor:* You don't have to do this. You don't want to do this!
> *T-101:* Desire is irrelevant. *I am a machine.*

Despite the T-101's emphatic denial, he does manage to temporarily shut himself down, reject the Terminatrix's control, and resume his mission to protect Connor and Kate Brewster. While the T-101's unexpected self-control may be rendered as 'force of will' or other such clichés, a simpler explanation is that, returning to Hayles' argument discussed earlier, information is contextually created and contextually meaningful. The T-X may have introduced another set of information into the T-101's body, but she failed to damage the existing information, leaving her opponent's CPU (Central Processing Unit, or metaphoric mind) intact. When the T-101's internal conflict raged, the existing information was already contextually formed through the linkages between mind and body (or CPU and cybernetic form). Due to the inescapability of the materiality of informatics, that information was more coherent, thus overcoming the contextually alien information introduced by the Terminatrix. Significantly, the T-101's success is not a conquest of mind over body, but rather a victory of *mind and body* as an inextricably interconnected system, even in a technologised form. Thus even the superior artificial intelligence of the T-X is no match for the significance and coherence of an embodied system, even in a technological form.

Unlike the first two films, *T3* ends on a pessimistic note; the T-101 self-terminates in order to take the T-X with him into oblivion while John Connor and Kate Brewster discover, with post-September 11 overtones, that they cannot prevent the coming

war, they can only survive it. With regard to the first two films, J.P. Telotte argues that

> the cyborg protector of *Terminator 2: Judgment Day* becomes almost a metaphor for the science fiction film itself, demonstrating how our technological creations might help us deal with the world we are in the process of making, help us draw back from the apocalyptic direction in which we seem headed, by leading us toward a new and deeper sense of self.[110]

While the protagonists of *T3* do not escape Judgement Day, the T-101's final promise to John, "we'll meet again," is not an ominous reminder about John's eventual demise, but rather, a hopeful sign of a future where humans and artificial intelligence will learn to peacefully co-exist, just as have the terminator and John Connor. John Connor might be the human messiah needed to lead the war against Skynet (he certainly shares his initials with another well-known saviour), yet it is not just John's tactical knowledge which will serve the future of humanity, but also his appreciation for the necessary relationships between humanity and technology, lessons learnt, in large part from the two paternal incarnations of the Schwarzenegger terminator. Just as the *Terminator* trilogy reinforces the importance of embodiment and materiality, even for artificial intelligences, it also emphasises the dire necessity for humanity and intelligent artificiality to learn to co-exist symbiotically after major disruptions at the levels of narrative, symbolism and epistemology. Moreover, given the overall time-loop narrative of the *Terminator* films, as Judgement Day arrives at the end of *T3*, audiences are already aware that humanity will survive to be led by John Connor and Kate Brewster, both of whom have learnt the value of working with artificial intelligences, not just against them.

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[110] Telotte, *Replications*, p. 43.

Conclusion

Science fiction cinema, replete with its paradoxically normalised structure of internal contradictions and ambiguities, proves an extremely fertile context in which to address the significance of representations of artificial intelligence. In early AI cinema, Kubrick and his collaborators used the nuances of the genre to ask difficult questions about the relationship between artificiality and humanity, ultimately creating a suggestive masterpiece which reveals both technologically embodied AIs and the ongoing symbiosis of human beings and artificiality (intelligent or otherwise). The contemporaneous *Colossus: The Forbin Project* and *Demon Seed* reveal similar trends, etching spaces where artificial intelligences both covet and champion embodied existence. The *Terminator* trilogy reveals a world where representations of artificiality and gender commingle in unexpected and often contradictory ways, but which nevertheless champions the materiality of informatics as well as the informatics of materiality. To survive the Judgement Day heralded by the paradigmatic and epistemological conflicts between human subjects and humanism-shattering AIs, the constructions and representations of artificial intelligence in science fiction cinema reveal both the ongoing importance of embodiment and that the only way to forward is together. The core of artificiality is thus not oppositional to humanity, but rather, a mechanism for revealing the importance of symbiosis between humans and intelligent machines.

CHAPTER 2: ARTIFICIAL LIFE

Emergent Introduction

In 1987 Christopher Langton, a postdoctoral fellow from Los Alamos National Laboratories, New Mexico, hosted a conference in which he officially named into being both a new scientific discipline and a provocative new conceptual term which would capture the imagination of scientists, writers and the general public alike: Artificial Life was 'born'.[1] If Artificial Intelligence (AI) was originally conceived of as a replication and extension of the human mind, then Artificial Life (ALife) occupies the other half of the Cartesian binary and was originally focused around replicating the activities of living bodies. The 'artificiality' of both AI and ALife stems from the digital 'reproduction' of existing 'natural' structures in informatic digital formats; form, in both disciplines, is always more important than matter. However, if the ability to convincingly communicate information as evinced through the Turing Test remains the (unachievable) benchmark for 'real' AI, then for ALife the test for 'real' life is evolution.[2] ALife as a discipline started from the idea that successful computer-generated biological models which 'accurately' exhibited evolutionary traits would illuminate 'real' life simply in an artificial (digital) context. Originally, ALife was focused on 'replicating' *life-as-we-know-it*, but quickly edged into the more speculative

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[1] Stefan Helmreich, *Silicon Second Nature: Culturing Artificial Life in a Digital World*, Berkeley, Los Angeles, London, University of California Press, 1998, p. 9.
[2] N. Katherine Hayles, *How We Became Posthuman*, Chicago and London, University of Chicago Press, 1999, p. 224.

modelling of *life-as-it-could-be*. Feminist critic Alison Adam has characterised this transition as a move from 'weak ALife', which has the potential to reveal 'interesting things about the way life has evolved', to 'strong ALife' which views the ALife simulations as really alive in their own right.[3] However, many analyses and critiques have already argued that weak ALife models of *life-as-we-know-it* are as subjectively constructed by the scientists involved, as the strong ALife creations of *life-as-it-could-be*.[4] As Stefan Helmreich argues in his anthropological study of Artificial Life practitioners, *Silicon Second Nature*:

> Artificial Life scientists' computational models of "possible biologies" are powerfully inflected by their cultural conceptions and lived understandings of gender, kinship, sexuality, race, economy, and cosmology and by the social and political contexts in which these understandings take shape. Ideas and experiences of gender and kinship circulating in the heterosexual culture in which most researchers participate, for example, inform theories about "reproduction," "sex," "relatedness," and "sexual selection" in artificial worlds, and notions of competition and market economies in the capitalist West shape the construction of "artificial ecologies" in which populations of programs vie to "survive" and "reproduce."[5]

Just as any application of evolutionary theory must make assumptions about what evolution really entails, so too must the modelling of artificial life rely upon cultural assumptions about what it means to be alive. Also implicit is the big stumbling block for artificial evolution: evolutionary theory requires life to mutate and change *itself* without the need for any form of guiding creator or God; for artificial evolution to occur, the scientists and computer programmers *must act as God* to build the digital contextual

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[3] Alison Adam, *Artificial Knowing: Gender and the Thinking Machine*, London and New York, Routledge, 1998, p. 151.
[4] Helmreich, *Silicon Second Nature*, p. 224.
[5] Helmreich, *Silicon Second Nature*, p. 11.

conditions and original forms of life in order to even begin simulating evolution.[6] Charles Darwin's evolutionary theory may have 'killed God', but ALife seems to have resurrected 'Him'.[7]

This chapter begins with an analysis of two cultural tales of 'digital genesis': the first, the US National Library of Medicine's Visible Human Project wherein two corpses were technologically re-animated to provide virtually alive anatomical reference models; and the second, the imaginative origins of both digital 'Copies' of human beings, and computationally indigenous artificial life, as explored in the speculative fiction of Australian author Greg Egan's novel *Permutation City*. The two forms of digital genesis intertwine on a number of levels, and feminist cultural critic Catherine Waldby's *The Visible Human Project: Informatic Bodies and Posthuman Medicine* provides a number of important concepts linking the contemporary biomedical imaginary with the broader cultural extrapolations of science fiction. The key concept drawn from Waldby which I use to trace the lines from the Visible Human Project to the different forms of digital life is the idea of 'IatroGenic desire', an ironic re-working of iatrogenesis, the medical terminology for unintended and unintentional secondary pathology resulting from medical intervention in the human body. For Waldby, IatroGenic desire reveals a deeper biomedical longing for bodies which behave in the terms medical science expects, as

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[6] Sarah Kember, *Cyberfeminism and Artificial Life*, London and New York, Routledge, 2003, p. 57.

[7] I use the gendered term Him purposefully to signal the fact that the vast majority of artificial life designers, programmers and scientists are male. For a thorough feminist critique of the ideas and workings of early ALife and its practitioners, see Alison Adam, *Artificial Knowing* or Sarah Kember, *Cyberfeminism and Artificial Life*. For a specific critique of the idea of 'creators' in the scientific discipline of ALife, see Sarah Kember, *Cyberfeminism and Artificial Life*, p. 54.

opposed to a medical system which can accommodate the messy, unpredictable contingency of material embodiment.[8] Extending the concept of IatroGenic desire to encompass the relationship between top-down modelled human-like 'Copies' and bottom-up emergent artificial life, I will argue that an encounter between the two produces a relational power system similar to colonial hierarchies in which artificial life is 'othered' and acts as *IatroGenic life*. Similarly, I will analyse the role of embodiment in digital contexts and argue that despite an ongoing liberal humanist fantasy of dematerialisation and disembodiment, artificial life, at least as explored in Egan's speculative fiction, actually reifies consistent and meaningful informatic bodies.

The latter half of this chapter focuses on *Diaspora*, Greg Egan's second artificial life novel. In *Diaspora*, artificial life is no longer the 'other' of organic human life, but rather characterises the central self-reliant protagonists. The novel is set substantially further in the future and explores a situation in which biological and artificial life co-exist on, more or less, equal terms. The analysis of *Diaspora* is framed by Sarah Kember's work, especially her critique *Cyberfeminism and Artificial Life*, which examines the intersections between artificial life, cybercultural studies and feminist theory. The two key concepts drawn from Kember's work are emergence and convergence. Emergence is the idea that artificial life, given the right form, will evolve spontaneously and in unpredictable ways. The concept immediately raises issues about

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[8] See Catherine Waldby, *The Visible Human Project: Informatic Bodies and Posthuman Medicine*, London and New York, Routledge, 2000, chapter five 'Iatrogenesis – Digital Eden and the reproduction of life', especially pp. 111-114.

what form(s) of evolution are expected and developed. Indeed, Kember uses emergence as a springboard to develop a critique of the genetic determinism of sociobiology, concurring with Alison Adams' argument that 'A-Life *is* sociobiology in computational clothing'.[9] Kember's sociobiologist of choice for critique is Richard Dawkins whose 'selfish gene' theory epitomises genetic determinism. Thus in my analysis of *Diaspora*, I will also address Dawkins' theory, Kember's critique and the way both of these positions are reflected in Egan's novel. The other major concept, convergence, refers to the increasing intersection and intertwining of natural and artificial systems. I argue that despite the bifurcation of digital and organic communities in *Diaspora*, both are convergent, allowing ideas of embodiment and informatics to be analysed across the entire novel. Moreover, the climactic events of the novel directly involve moments of ontological and material 'bridging' which centrally locate the idea of convergence. Ultimately, I conclude that both novels illuminate a symbiotic relationship between embodiment, philosophies of materiality and informatics.

IatroGenic Permutations: From Digital Genesis to the Artificial Other

According to international media headlines, November 1994 saw a spectacular and completely unprecedented event: fifteen months after his execution by lethal injection, convicted murderer Joseph Paul Jernigan was dramatically resurrected in cyberspace. Journalistic embellishments aside, there was nothing miraculous about Jernigan's reappearance. Rather, after leaving his body to medical science, he became the first

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[9] Alison Adam, *Artificial Knowing*, p. 150.

template for the US National Library of Medicine's ambitious Visible Human Project. Accordingly, Jernigan's corpse was dissected, then planed into cross-sections one millimetre thick; these segments were then exhaustively scanned and finally converted into high-resolution three-dimensional digital recordings. The resulting complete anatomical model could not only be viewed, examined and manipulated in a number of different ways but could also be made to model living functions: 'the heart [could] be made to beat, the veins to bleed, [and even] the flesh to bruise and lacerate.'[10] In the informatic Visible Man, the supposedly clear and rigid distinction between animate and inanimate—or life and death—had, at the very least, begun to blur. Thus, when a second subject, the Visible Woman, joined her male counterpart online, media reports predictably announced a new technological Eden in which 'Virtual Eve joins Virtual Adam'[11].

In the same year that the Visible Man debuted online, Australian science fiction author Greg Egan was also exploring the idea of digital bodies in his novel *Permutation City*. His goal was to take digital existence and conscious software 'absolutely seriously, and push the logical consequences as far as possible'.[12] To this end, his novel is divided into two main sections. The first deals with the issues arising from the introduction of conscious informatic 'Copies' of (mainly deceased) humans in the not-too-distant-future. The impact of this 'digital genesis' is examined from the perspectives of both

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[10] Waldby, *The Visible Human Project*, p. 16.
[11] *Washington Post*, 5 December 1995 as quoted in Waldby, *The Visible Human Project*, p. 111.
[12] Greg Egan, "Counting Backwards from Infinity: An Interview with Greg Egan," *Eidolon*, 15, 1994, p. 42.

embodied biological humans and their emergent digital counterparts. The second section focuses more intensely on identity formation, subjectivity and day to day existence for informatic subjects within a closed, coherent, and independent digital environment. Individually, both *Permutation City* and The Visible Human Project are seminal sites from which to address contemporary cultural anxieties about embodiment and subjectivity in the digital millennium. Despite quite different contexts for their construction and development—one emerging from the nexus of biomedical technology and capital punishment, and the other (most directly) from the mind of an author of speculative fiction with a strong background in computer science—there are many points of connection between these two, broadly termed, texts. Moreover, when analysed comparatively, these texts illuminate significant common themes and intersecting tropes. Most important among these is a consistent questioning of human subjectivity, identity and embodiment in the face of new biomedical and technological advances.

As cultural critic Catherine Waldby has noted in her seminal work on the biomedical imaginary, the Visible Human Project was continually framed by Genesis references. In the popular media, for example, 'the launch in late 1995 of the Visible Woman data … was almost universally presented as the provision of a mate for the Visible Man, an Eve sent to cyberspace to provide companionship for a solitary Adam.'[13] Genesis iconography in this instance can be read in two ways: as *the* beginning, in the literal

[13] Waldby, *The Visible Human Project*, p. 111.

religious interpretation; or as evoking the continuation of a Western tradition with a past deeply rooted in Christian mythology. Ostensibly, reading the Visible Human Project as a new beginning seems the more compelling interpretation: the Visible Human figures are, after a fashion, miraculously reanimated in a bold new digital world where they will never age or decay, infused with a form of artificial vitality.[14] In contrast, some critics argue that the Project is the latest high-tech step in Western medicine's anatomical tradition that can be traced back to the earliest anatomy sketches of the sixteenth century.[15] Waldby, however, takes a more complex approach, arguing for a form of Genesis located within medical science: an *iatro*genesis.

Conventionally, iatrogenesis refers to the secondary and unintended by-product of medical procedures. So, for example, the nausea and hair loss associated with chemotherapy are IatroGenic illnesses; they are pathologies directly resulting from medical science's intervention in the human body. Catherine Waldby redeploys iatrogenesis and coins the ironic term 'IatroGenic desire', explained as:

> a wilful reconfiguration of the everyday meaning of iatrogenesis … It is the desire to create, not disease, but rather bodies which are stable, self-identical rather than fields of perverse contingency … IatroGenic desire is a kind of authorial desire in that it wants to "make up" entities as acts of technical creation, through technically specifiable procedures which will produce reliable forms of life. … As it circulates in the early twenty-first century, IatroGenic desire could be summarised as the

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[14] See Waldby, *The Visible Human Project*, pp. 117-129.
[15] As discussed in Eugene Thacker, "Lacerations: The Visible Human Project, Impossible Anatomies, and the Loss of Corporeal Comprehension," *Culture Machine*, 3, 2001, http://culturemachine.tess.ac.uk/Cmach/Backissues/j003/Articles/Thacker/Impossible.htm, accessed 10th June 2002. (However, it is *not* Thacker's contention.)

> desire for *programmable matter*, for a capacity to order materiality according to the algorithmic efficiencies of the computer.[16]

IatroGenic desire thus designates the Visible Human Project as symptomatic of the biomedical imaginary's fantasy of erasing the chaotic specificity and contingency of individual material bodies in favour of stable universal forms. Through Waldby's reading, the Visible Human Project entails acts of medical creation which reify the informatic over the material and the universal over the specific.

Turning to *Permutation City*, the Genesis of the conscious informatic Copies is, ironically, the Visible Human Project itself. As Egan describes them, Copies are:

> elaborate refinements of whole-body medical simulations, originally designed to help train surgeons with virtual operations, and to take the place of animals in drug tests. A Copy was like a high-resolution CAT scan come to life, linked to a medical encyclopaedia to spell out how its every tissue and organ should behave … A Copy possessed no individual atoms or molecules; every organ in its virtual body came in the guise of specialised sub-programs which knew (in encyclopaedic, not atomic, detail) how a real liver or brain or thyroid gland functioned.[17]

Copies are the end point of IatroGenic desire: while their virtual bodies may retain some cosmetic surface differences, with the exception of initial mental specificity, their physiology is produced entirely through medical knowledge. As Michel Foucault has argued, medical science has always exercised power in authorising knowledge about the body.[18] In the case of Egan's Copies, this authorising power becomes absolute; the virtual embodiment of each Copy is literally created, controlled and maintained by

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[16] Waldby, *The Visible Human Project,* pp. 113-114. Italics in original.
[17] Greg Egan, *Permutation City*, London, Millennium, 1994, p. 23.
[18] Michel Foucault, *Madness and Civilization: A History of Insanity in the Age of Reason*, New York, Vintage Books, 1973.

medical science. In their informatic context, the body of Western medical knowledge literally *forms* the Copies' bodies. Despite some literary critics concluding that Copies are thus 'non-bodies'[19], I contend that even in their informatic context, Copies are still to some extent embodied. However, their embodiment is markedly different to that of subjects in the material world. Indeed, given that ongoing debates about the relationship between mind and body have influenced how subjectivities are formed in modernity, it is precisely the differences in the Copies' embodiment which make them useful sites for inquiry into embodiment's shifting cultural meanings.

For at least one Copy in *Permutation City*, traditional biological embodiment is considered the key marker of 'humanity'. The Copy known as Peer rejected his former name and the impulse to live *as if* still human, just in digital form. Rather, Peer revels in his post-human status:

> He plunged his fist into his chest, effortlessly penetrating the shirt, skin and ribs, and tore his heart out. He felt the parting of his flesh, and the aftermath – but although aspects of the pain were 'realistic', preprogrammed barriers kept it isolated within his brain, a perception without any emotional, or even metabolic, consequences. And his heart kept beating in his hand as if nothing had happened; the blood passed between the ragged ends of each broken artery, ignoring the 'intervening distance'. (63)

Peer treats his infidelity to biological rules as evidence that he is no longer part of, or restricted by, the material world from which his template originated. Similarly, the placement of terms such as 'realistic' and 'distance' in quotation marks highlights the

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[19] Ross Farnell, "Attempting Immortality: AI, A-Life, and the Posthuman in Greg Egan's *Permutation City*," *Science Fiction Studies*, 27, 1, 2000, p. 75. Farnell does qualify in a footnote that Copies may have some form of 'corporeal instantiation', as pointed out by N. Katherine Hayles, but he does not pursue this point in his main argument.

informatic rather than material basis on which these terms seemingly function for Copies. However, as fellow Copy Kate reminds him, things are not that cut and dried. While they may be primarily informatic, their software and patterns must still be processed on physical hardware in the material world. Moreover, a perceived threat to their ongoing access to that hardware is a threat to their very existence. For Peer and Kate, these worries are particularly acute since they both have relatively limited estates. To make the most of their posthumous funds, their programs bounce across the internet, being maintained in whichever system has the lowest processing costs. Being on the wrong side of the 'digital divide'—the gap between the 'haves' and 'have-nots' in the informational economies of the material world—appears to have a direct correlation with the experiences of Copy-hood. Peer and Kate have become commodified subjects in an eerily literal fashion.

Several critical analyses of The Visible Human Project map a similar push toward bodily commodification. Sarah Kember argues that contemporary medical and imaging technologies such as the ultrasound already attempt to cast reproduction as a commodified relationship between a foetus and medical science evinced by 'scanned images of foetuses which effectively eliminate the mother's body from view', emphasising seemingly technologised creation.[20] Catherine Waldby extends the idea, arguing that the 'vital icons' of the Visible Human figures and their IatroGenic origins illuminate a 'biomedical imaginary … which is directed towards the mastery of

[20] Sarah Kember, *Virtual Anxiety: Photography, New Technologies and Subjectivity*, Manchester & New York, Manchester University Press, 1998, p. 78.

corporeal matter and vitality along the lines of the commodity and the mechanically reproducible invention.'[21] Indeed, the fear of being reduced to merely another reproducible commodity is a constant one for many of the Copies in *Permutation City*. The most powerful and outrightly ironic invocation of this anxiety is seen in the character of Paul Durham, who, when faced with making a second generation copy of his digital self, refuses, stating: 'I want one life, one history. One explanation. Even if that has to come to an end' (301).

The narrative of *Permutation City* actually begins with two different incarnations of Paul Durham: one is biological, while the other is an informatic Copy. The biological Durham is obsessed with Copies and is attempting to investigate them using himself, or rather his Copy, as test subject.[22] When the Copy initially awakens he is immediately overwhelmed by two feelings: firstly, the realisation that he is no longer 'Paul Durham', despite possessing all of 'his' memories; and secondly, a deep abiding sense of lack due to the absence of the material world. Indeed, the loss of the material is too much for the Copy and he immediately attempts to commit digital suicide. The Copy is not alone in these feelings; the narrative reveals that *every* Copy that has a biological original still alive in the material world has terminated themselves (1-7). Readers discover that in *Permutation City*, the first ever Copy was of

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[21] Waldby, *The Visible Human Project*, p. 136.

[22] For ease of discussion I will refer to the biological version simply as Durham and the informatic version as the Copy. However, this use of terminology should not be taken to unproblematically imply the primacy of the biological Durham over the Copy.

> John Vines, a Boston neurosurgeon, [who, in 2024] ran a fully conscious Copy of himself in a crude Virtual Reality. Taking slightly less than three hours of real time (pulse racing, hyperventilating, stress hormones elevated), the first Copy's first words were: 'This is like being buried alive. I've changed my mind. Get me out of here.' (39)

Ironically, while the biological Durham and Vines exhibit N. Katherine Hayles' first characteristic of posthumanism—namely that they 'privilege informational pattern over material instantiation'[23]—their respective informatic Copies do not. For the Copies, materiality and biological embodiment are considered integral to meaningful existence. In *Permutation City*, embodiment also remains part of the legal definition of humanity. Copies have no legal status, are not recognised as 'being alive', and have the ability to self-terminate not due to radical new euthanasia laws but rather as a 'requirement [that] arose solely from the ratification of certain, purely technical, international software standards' (6). However, the Copy's story does not end there; during his suicide attempt, the Copy discovers that Durham, his biological template, has illegally removed the self-termination software.

As his enforced existence continues, the Copy's attitude toward embodiment starts to change. Forced to confront digital embodiment, the Copy begins exploring his software body in a distant, philosophical manner:

> He took a sharp vegetable knife from the kitchen drawer, and made a shallow cut against his left forearm. He flicked a few drops of blood into the sink—and wondered exactly which software was now responsible for the stuff. Would the blood cells 'die off' slowly—or had they already been surrendered to the extrasomatic general-physics model, far too unsophisticated to represent them, let alone keep them 'alive'? (9)

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[23] Hayles, *How We Became Posthuman*, p. 2.

In flicking the blood away, the Copy explores the question of where 'he' begins and ends. Does his corporeal boundary extend to anything processed and simulated by the software designated as the Copy of Paul Durham? Does the meaning and value of anything once part of the Copy lessen, when expelled from that informatic system? Implicitly, the Copy is also exploring whether his digital body is actually alive in any way: the inverted commas surrounding the words 'die' and 'alive' simultaneously distance the concepts from their material origin, while also questioning whether there are equivalent digital processes.

In the following days, the Copy slowly acclimatises to digital embodiment. When out exploring the limits of his virtual reality environment, he starts enjoying the 'perfect spring day' being simulated around him:

> He let himself surrender for a moment to a visceral sense of identity which drowned out all his pale mental images of optical processors, all his abstract reflections on the software's approximations and short-cuts. This body didn't want to evaporate. This body didn't want to bale out. It didn't much care that there was another – ' more real' – version of itself elsewhere. It wanted to retain its wholeness (11).

Despite both his body and mind being completely informatic, the Copy regains a functional sense of normality by rendering his experience of them in the dichotomous manner characterising his remembered 'material' past. In the informatic and material permutations of Paul Durham, Greg Egan presents no easy, unambiguous answers to the question of artificial embodiment. The material version Durham is decidedly posthuman in his preference for pattern over materiality, while the Copy begins unable to cope without materiality *per se*, but then slowly accommodates an informatic context by mimicking his material 'past'. At this point it is worth noting that Durham's goal is to

facilitate the 'launch' of an independent self-contained and self-sustaining digital environment populated by Copies. Since embodiment remains ambiguous in digital identity formation, Durham must employ different strategies to make his virtual world habitable for Copies.

During the construction of his digital haven, Durham employs software developer Maria Deluca. Maria is far more sceptical about Copies in general, and her uncertainty about the authenticity of informatic existence juxtaposes strongly with Durham's exuberance. Ross Farnell argues that Durham's euphoric embrace of Copies in comparison to Maria's dubiousness is constructed along the lines of the traditional gender dichotomies of liberal humanism and thus entails 'essentialist correlations between the female, the body and matriarchy'.[24] Farnell's argument is supported by the inclusion in the narrative of Francesca, Maria's mother, whom it is discovered is dying from a terminal illness. Maria's almost instinctual desire to preserve Francesca sees her decide to pay for Francesca to be scanned. However, Francesca refuses the process, explaining: 'I *do* believe that Copies are intelligent. I just wouldn't say that they are – or they aren't – "the same person as" the person they were based on. There's no right or wrong answer to that; it's a question of semantics, not truth' (77). Through Francesca, another level of questioning about Copies arises; even if Copies are intelligent, does the digital reinscription of their mental pattern actually involve recreation of *that person* or the creation of something altogether new and different? At a more basic level, the question

[24] Farnell, "Attempting Immortality", p. 76.

becomes: can a person be reduced to a binary pattern? Francesca's concerns also beg the question as to the role of the intersection of people and technology which actually perform the scans, thus creating Copies.

Sarah Kember examines the role of the medical 'creators' of the Visible Human figures, and argues that 'the re-creation of Adam and Eve in cyberspace' amounts to a patriarchal 'omnipotence fantasy enacted in the face of medicine's generative limitations and by means of a fetishistic use of technology' which attempts to facilitate the complete appropriation of reproductive ability away from women into the hands of male-dominated medical science.[25] In *Permutation City*, Paul Durham certainly seems to be driven, in a large part, by a similar parthenogenic impulse. However, Durham's aims are not limited to creating digital life, but are more grandiose in that he wants to create a completely separate digital universe for Copies. Indeed, one of the most evocative passages in the entire novel occurs when the biological Durham believes he has successfully 'launched' the digital world he created which also contains Durham's Copy. During their work together, Durham and Maria form a bond which sees them sharing a bed the night after the launch. Maria struggles with vivid nightmares in which she dreams of giving birth, but she suddenly awakens when the '"child" turns out to be nothing but a blood-stained statue, carved from smooth, dark wood' (203). However, when she visits the bathroom, she discovers Paul Durham dead on the floor. He has committed suicide by pushing a knife into his stomach and ripping out his own

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[25] Kember, *Virtual Anxiety*, p. 88.

intestines. Maria exclaims, 'it was Durham who'd *keep pushing*, Durham who looked like he'd tried to give birth' (204). This bizarrely grotesque parody of birth illuminates a strong critique of the parthenogenic impulse. Durham's ambition to play the role of creator is parodied and cast as completely irrational to the extent that the biological Durham can see no reason to continue existing once his digital Copy is living the life to which he aspires. Durham appears to have completely reified his digital existence to the extent that a biological existence that he would deem 'lesser' has no appeal whatsoever. Moreover, in taking his own life, Durham ironically completes an act he prevented his digital Copy from taking earlier in the novel. At a broader symbolic level, this scene in *Permutation City* evokes a powerful critique of Western medical science's IatroGenic desires and parthenogenic fantasies.

The reason that Durham had originally employed Maria was because her first and foremost passion was the Autoverse. Egan describes the Autoverse thus:

> The Autoverse was a 'toy' universe, a computer model which obeyed its own simplified 'laws of physics' – laws far easier to deal with mathematically than the equations of real-world quantum mechanics. Atoms could exist in this stylised universe, but they were subtly different from their real-world counterparts; the Autoverse was no more a faithful simulation of the real world than the game of chess was a faithful simulation of medieval warfare. It was far more insidious than chess, though, in the eyes of many real-world chemists. The false chemistry it supported was too rich, too complex, too seductive by far (20).

The Autoverse is similar enough to the material world to support a rich chemistry, but it is different enough for it to act in confrontingly unexpected ways. Indeed, the Autoverse

is to chemistry what the contemporary computer game *The Sims* is to suburban life.[26] Due to its unpredictability, the Autoverse was designed primarily as a testing ground for Artificial Life. Artificial Life is the bottom-up approach to informatic life, starting from cellular automata or digital bacteria and encouraging these basic originary units to mutate into more complex lifeforms. When Maria becomes the first person to create an Autoverse bacterium that usefully mutates and survives, it is then that Paul Durham turns his attention to her. He commissions Maria to create a 'seed for a biosphere'; that is, an outline for a complete Autoverse planet with a single organism which, given time and computing resources, could conceivably 'evolve' into various intelligent lifeforms (94). When pressed by Maria into explaining the seed's purpose, Durham frames his response in familiar Genesis iconography. He explains he is creating an informatic 'Garden-of-Eden' configuration, a beginning point for his closed self-reliant digital universe (164). Durham's virtual universe has a number of elements, including, he tells Maria:

> your contribution: the seed for an alien world. … Sure, we'll no doubt have our own software descendants, and recreated Earth animals, and no doubt, novel, wholly artificial creatures as well. We won't be alone. But we still need a chance to confront the Other. We mustn't leave that possibility behind (168).

Durham views 'the Other' as fundamental to the Copies' attempts to construct coherent digital subjectivities. Rather than escaping the self/other binary, the Copies actually try to shore up their sense of self against a manufactured, artificial Other. For Durham, the digital realm has all the potential of 'unexplored worlds' in Western colonial history.

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[26] *The Sims* is a videogame produced by EA Games which entails a game world which simulates suburban lives in their everyday activities from finding careers to cooking and going to the bathroom.

Seven millennia after the Garden-of-Eden configuration is successfully deployed, the Copies' highly populated digital universe is thriving. The central attraction is Planet Lambert, a complete Autoverse world grown from Maria's biosphere seed, which Copies can observe but with which they cannot yet interact. Subjective time is moving faster in the Autoverse region of the digital universe than in the Copies' own digital realm, which they have rather arrogantly dubbed Elysium (the Ancient Greek name for the equivalent of Heaven). In their faster timeframe, Planet Lambert is already diversely populated and includes the partially insectoid but highly intelligent Lambertians.[27] I would argue that the Lambertians are most usefully examined through the concept of 'IatroGenic life'; that is, artificial life created specifically as an Other against which Copies, whose origins are already located within IatroGenic desire, can define their sense of subjectivity. Iatrogenic Life functions both as a support for Copies' sense of subjectivity, but also points to the contingent, ambiguous and constructed origins of that sense of self. Indeed, as the Elysians are, in many ways, playing God, the Lambertians thus fulfil the role of mortals over whom the creators can eventually rule. There are massive debates in Elysium about how and when the Copies should finally make contact with their Lambertian 'creations', but the colonial rhetoric is unmistakable. However, just as the Copies intend literally to 'confront the Other' and announce themselves to the Lambertians as their Creators, the Copies discover that their own world is destabilising.

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[27] The Lambertians' insectoid character is most likely a nod toward Artificial Life designers who often utilise ants as a model for their research as noted in Alison Adam, *Artificial Knowing*, p. 139.

When the Lambertians unexpectedly develop a stable ontology explaining their world without need for Creators, their system and physical laws ripple outwards, engulfing the Copies' surrounding digital world of Elysium. The Lambertian system becomes completely stable and their belief structure, which has no need for a creation 'myth', starts rewriting the surrounding digital realm, undermining the digital fluidity and malleability of Elysium. The Copies are forced to flee, trying to launch an alternative Garden-of-Eden configuration without the seeds for Planet Lambert. Ironically, rather than reinforcing their sense of self, creating an Other proves lethal for the Copies. Also ironic is that the Lambertians endure while their self-appointed Creators perish. Part of the reason for the Lambertians' survival is found in Hayles' argument: that in a dematerialised context there is an epistemic shift away from a presence/absence binary, to a spectrum bounded by pattern and randomness.[28] Given that the Autoverse-indigenous Lambertians are modelled atomically, while the Copies remain *ad hoc* patchworks of organ-level sub-systems, simply put the Lambertians endure because they are more complex patterns. Moreover, these patterns derive not only from the Lambertians' digital consciousness or minds but also from their informatic bodies. Extrapolating more broadly, Greg Egan's deployment of the Lambertians makes two powerful points: firstly, that Otherness is not an unproblematic given but rather a construction with destructive tendencies[29]; and secondly, that even in a completely digital context, embodiment and bodies still matter.

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[28] Hayles, *How We Became Posthuman*, p. 29.
[29] Andrew Macrae, "Looking Awry at Cyberpunk through Antipodean Eyes: Reading Neal Stephenson and Greg Egan from the Margins," *Australian Studies*, 13, 1, 1998, p. 37.

In tracing the pathway of IatroGenic permutations from the Visible Human Project to Greg Egan's *Permutation City*, a number of important themes are addressed. Most significant among these is the textual articulation that, while the shift from material to a digital context may hold the *potential* for radical questioning of identity and existing social and cultural structures, the shift in itself does not *necessitate* such inquiries. Indeed, the epistemological uncertainty of subjectivity in the face of the virtual may not lead to a radical break with existing structures of knowledge and power at all. Rather, the desire to maintain a coherent sense of self may cause these structures to be transplanted into emerging digital contexts with minimal challenge. *Permutation City* most clearly illustrates the continuation of inequitable power structures in the Copies' creation of an artificial Other, against which to stabilise their own fluid subjectivities. However, while the resulting IatroGenic life—in the form of the artificial life Lambertians—may initially fulfil their designated role as Other, by the novel's conclusion this role has been ironically inverted. *Permutation City* may present a pessimistic view of the potential for significantly challenging existing modes of subjectivity, at least in the example of the informatic Copies. However, it nevertheless presents a stronger critique of failing to make the attempt, a critique dramatically illustrated by the fall of the Copies. Similarly, the point is reinforced that artificial life may be conceived of as a convenient 'other', but others have a tendency to challenge the systems which spawned or constructed them. Both *Permutation City* and the Visible Human Project leave a provocative question mark after each of the four categories of technology, artificiality, subjectivity and embodiment, the main value of comparatively

reading these two texts is the important reminder that none of these categories can be conclusively divorced from the other.

Diasporic Subjectivities: Not Quite 'Beyond the Infinite'

Written several years after *Permutation City*, Greg Egan's second novel dealing with artificial life and digital existence is *Diaspora*. It takes place in a different science fictional time and space, set roughly a millennium in the future. While issues of artificiality, embodiment and the authenticity of digital life are still central, they are addressed from the *inside* of a coherent digital culture, not from the outside as in the majority of the narrative of *Permutation City*. In *Diaspora*, the population of the Solar System is divided into three groups: *fleshers*, biologically embodied human beings, most of whom have undergone some form of genetic manipulation (although there are still some completely unmodified human beings derogatorily referred to as 'statics'); *gleisners*, robots that are basically amalgams of sentient software and semi-permanent human shaped hardware bodies; and *citizens*, completely artificial digital lifeforms, some of which originated in biological form but the majority of which have been 'born' and bred entirely within a digital system. The citizens live inside separate 'polises', independent and self-sustaining networked computer hardware systems, but each polis is in contact with every other. The citizens' digital world is collectively known as the Coalition of Polises. Moreover, it is the citizens' perspectives, narrated from within the polises, which dominate the novel.

From the outset, the question of embodiment may seem moot for artificial lifeforms given that biological flesh is a thing of the past (if even that) for the polis citizens.

However, building upon Sarah Kember's major critical work *Cyberfeminism and Artificial Life*, *Diaspora*, and the artificial citizenship narrated therein provides an opportunity to interrogate how concepts, metaphors and epistemologies of materiality and embodiment are scrutinised and re-articulated in a speculative context. Furthermore, given the consistent engagement with these ideas in *Permutation City*, examining *Diaspora* also facilitates an investigation of how the tropes of artificiality and embodiment shift within Greg Egan's body of work, and the development of ideas and concepts which form bridges between the two novels.

Whereas the central human-like digital characters, or Copies, of *Permutation City* could be considered the result of 'top-down' computational scanning and modelling, the polis citizens of *Diaspora* are formed at the other end of the modelling spectrum: they develop from the 'bottom-up'. More specifically, the Copies are the results of high-resolution scans of human brain and, consistent with a hierarchy of Cartesian dualism, the brain or mind is treated as the command and control centre and the (biological, and then in *Permutation City*, digital) body as peripheral and secondary. However, in *Diaspora* the polis citizens are 'grown' from tiny basic units, not unlike *Permutation City*'s Lambertians. Life *in silico* is thus not mapped and controlled from the 'top-down', as with Copies, but rather the citizens are *emergent* life, resulting from digital replication of evolutionary modes beginning from the smallest, 'bottom' level and developing into larger lifeforms. Sarah Kember more accurately defines the mode of

emergence as 'that which is not programmed in, but which evolves spontaneously and from the bottom-up through interaction with the artificial environment',[30] highlighting both the evolutionary drive behind theories of emergence, as well as the importance of context, of the artificial environment. Egan, as with many contemporary theorists of emergence, explicitly parallels emergence with biological systems.[31] *Diaspora* opens with a passage explicating digital emergence of artificial life in the form of polis citizens:

> In Konishi [one of the polises], every home-born citizen was grown from a mind seed, a string of instruction codes like a digital genome. The first mind seed had been translated from DNA nine centuries before, when the polis founders had invented the Shaper programming language to re-create the essential processes of neuroembryology in software. But any such translation was necessarily imperfect, glossing over the biochemical details in favour of broad, functional equivalence, and the full diversity of the flesher genome could not be brought through intact.[32]

Immediately this passage asserts the dominance of the genome. Although the digital version of genes may be a 'necessarily imperfect' translation of the biological, its principles and functionality are purportedly identical. In Egan's novel, the digital gene appears to be the 'bottom' or originary unit from which 'bottom-up' emergence, and thus digital 'life', takes place.

Following Kember, *Diaspora's* opening can ostensibly be read as a digital replication of Richard Dawkins' theory of the so-called 'selfish gene'. Dawkins is the Charles Simonyi Professor of Public Understanding of Science at Oxford and, appropriately

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[30] Kember, *Cyberfeminism*, p. 3.
[31] Kember, *Cyberfeminism*, p. 7.
[32] Greg Egan, *Diaspora*, London, Millennium, 1997, p. 5. (References hereafter bracketed in the body of the text).

enough, his published work usually falls into the category of popular science. Additionally, several of his books are key texts in the field of sociobiology, with the most famous of these being *The Selfish Gene*. In this work he argues that the gene is the primary and essential unit of life, and that bodies, society and culture are all by-products of the gene's desire to replicate. Moreover, genes are *universal replicators*, and survival in order to facilitate more replication is their only *raison d'être*. However, universal replicators are not necessarily genes or even organic and Dawkins argues further that the 'gene, the DNA molecule, happens to be the replicating entity that prevails on our planet. There may be others.'[33] Dawkins' speculations conveniently pave the way for the idea of a digital universal replicator.

While Dawkins' work may sound disturbingly like genetic determinism, he does attempt to qualify his position to some extent, introducing the idea of the cultural replicator or 'meme'. While genes emerged from the primeval organic soup of biology, memes develop in a new context and the 'new soup is the soup of human culture'.[34] Memes include 'tunes, ideas, catch-phrases, clothes fashions, ways of making pots' and so forth.[35] They appear to be relentlessly driven to multiply, with a desire to continually replicate inherent in each. However, the similarity between memes and genes makes differentiation between the two almost pointless since Dawkins ascribes the same overdetermined sense of agency to both 'replicators', arguing that '[j]ust as we have

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[33] Richard Dawkins, *The Selfish Gene*, New Edition, Oxford and New York, Oxford University Press, 1989, p. 192.
[34] Dawkins, *The Selfish Gene*, p. 192.
[35] Dawkins, *The Selfish Gene*, p. 192.

found it convenient to think of genes as active agents, working purposefully for their own survival, perhaps it might be convenient to think of memes in the same way'.[36] As N. Katherine Hayles has observed, 'Dawkins's rhetoric attributes genes human agency and intention', displacing motivations which 'properly belong to the human domain'.[37] Moreover, Dawkins' choice to name the meme not after imitation, which is where his idea stems from, but rather to turn to a Greek etymological root mimeme because he wanted 'a monosyllable that sounds a bit like "gene,"' is unfortunate given its similarity to the word *mimetic*.[38] Mimesis refers to things as they really are, suggesting a cunning semantic slight-of-hand on Dawkins' part, implying that memes really are the way of things, although, perhaps ironically, mimesis historically also has overtones of *mimicry* and false attempts at replication.

Although *Diaspora* ostensibly aligns with Dawkins' 'selfish gene' theory, Egan actually takes some pains to distance the citizens from the idea of genetic determinism, memes and universal replicators. At one point, Yatima and Inoshiro, two citizens of Konishi polis, are using robotic bodies to visit a flesher population on the Earth's surface. When crossing through a jungle, they stumble across a canister:

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[36] Dawkins , *The Selfish Gene*, p. 196. Dawkins does attempt to qualify his argument and claims he has 'emphasised that we must not think of genes and memes as conscious, purposeful agents.' However, his examples of this is that 'when we say "genes are trying to increase their number in future gene pools," what we really mean is "those genes that behave in such a way as to increase their numbers in future gene pools tend to be the genes whose effects we see in the world"' (*The Selfish Gene*, 192). Since Dawkins often conflates behaviour, agency and choice, this qualification holds little ground for most readers of his work or, indeed, the application of it in wider social and scientific circles.

[37] Hayles, *How We Became Posthuman*, pp. 227-228.

[38] Dawkins, *The Selfish Gene*, p. 192. Also quoted in Kember, *Cyberfeminism and Artificial Life*, p. 37.

> Ve[39] kept walking, but Inoshiro paused to examine it, then cried out in alarm.
> 'What?'
> 'Replicator!' …
> Inoshiro spoke in a hushed, sickened voice. 'Pre-Introdus, this was pandemic. Distorted whole nation's economies. It had hooks into everything: sexuality, tribalism, half a dozen art and subcultures … it parasitised the fleshers so thoroughly you had to be some sort of desert monk to escape it. … We're not talking nucleotide viruses here. The molecules themselves were just a random assortment of junk … *it was the memes they came wrapped in that made them virulent*.' (66; italics added).

To Inoshiro, replicators are not the fundament of their existence, but rather a dangerous, virulent threat which has the potential to radically alter the society and culture around them. With contemporary culture so gripped by the purported 'secrets of life' revealed by the Human Genome Project, the power of genetic imaginary is palpable.[40] Given the potential of genetic determinism to unleash a new eugenics[41], Egan's description of replicators as parasitic, endemic and contagious positions the novel as unmistakably rejecting these extreme ideas. Moreover, the contrast between the virulent dangerous memes and the material elements being simply 'random assortment of junk' highlights the danger of scientific concepts such as the 'meme'. These ideas are most powerful in their rhetorical, ontological and discursive deployment, *not* in any purported correlation with an unproblematical world of genetic dominance and determinism. Nor, by implication, does a digital attempt to replicate 'life' necessarily imply the exclusive dominance of the genetic-cum-digital code.

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[39] In *Diaspora*, Egan employs gender neutral terminology in the form of 've', 'ver' and 'vis' which are randomly mixed in reference to each citizen. Some citizens may choose to be gendered, but most are not or at least not permanently so.
[40] Helmreich, *Silicon Second Nature*, p. 13.
[41] See Kember, *Cyberfeminism*, pp. 27-50.

If citizens are emergent digital life originating, in part, from a digital genome, these beginnings immediately beg the question: what else is integral for the development of artificial life? Just as biological life does not spontaneously occur at random but requires very specific contextual circumstances and embodied processes, so too does artificial life. In *Diaspora*, artificial life does not randomly occur anywhere in the polises, but has one specific origin point: the conceptory. It is in the conceptory where the 'digital genome' of each citizen is tentatively put together, although this is not to a completely mapped process. Rather, the process is one which has as much to do with bounded chaos and chance as with any plan in the actual ordering of the informatic gene-equivalents. New citizens may be 'parented' by one, two, twenty or any other number of citizens, wherein parts of their digital genome is injected into the new citizens' primordial informatics. However, chaotic elements (produced mainly by the conceptory) still play a sizeable role in that assembly and the conceptory is also capable, at random intervals, of creating an orphan:

> whenever the conceptory created an orphan, it set all the benignly mutable trait fields to valid codes chosen at random, since there were no parents to mimic or please … it selected a thousand indeterminate fields, and treated them in much the same fashion: throwing a thousand quantum dice to choose a random path through *terra incognita.* (7)

The conceptory is not a mythical or supernatural entity or space, but is rather, 'non-sentient software, as ancient as Konishi polis itself' (5), encapsulating other translated or mimicked natural processes: 'a budding flower's nondescript stem cells followed a self-laid pattern of chemical cues to differentiate into sepals or petals, stamens or carpels … Konishi's digital version skimmed off the essence of the process' (9). After a certain amount of development, the conceptory moves the developing 'mind seed' into a developmental RAM structure called 'the womb'. The mind seed is then allowed to

develop further, subject to tests and checks performed by the conceptory to ascertain whether the mind seed is developing into a functional 'healthy' citizen.

The structure of the conceptory explicitly follows the way natural systems are thought to operate. The conceptory's operation reflects Sarah Kember's argument that in recent years there has been a 'biologisation of computer science'. This has installed a 'new biological hegemony' wherein technological and informatic templates are extrapolated, modelled and metaphorically operate in biological terms.[42] A technological system based upon the natural and biological represents something of a sea change. In earlier top-down AI design, and technoscience in general, the human body was treated more like a mechanical command and control system. In *Diaspora*, a biological hegemony is particularly pronounced in the conceptory's operation and in the construction of the mind seeds of new citizens. In part, the privileging of the biological contains a certain admission: top-down modelling did not work. The important implication is that technoscience never really understood where life comes from or how it really works. In contrast, bottom-up modelling based on biological and natural systems does not necessarily need to understand how life emerges in biology, only that it does: mimicking the system, even without comprehending it, may be enough to 'create' new life. Modelling in this instance, however, begs the question as to whether the model actually allows for one of the key characteristics of biological systems in natural environments, namely perpetual change and flux. This important question will be returned to below.

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[42] Kember, *Cyberfeminism*, p. 7.

The conceptory and its processes also illustrate something central to the evolution and development of new genomes or mind seeds: evolution takes place *through interaction with the surrounding environment* (be that material or digital). Further, while the conceptory may be informatic, the polises themselves are still material[43]: Konishi polis which contains the conceptory is, as the novel begins, 'buried two hundred metres beneath the Siberian tundra' (11). Even if the mechanisms of evolution are argued to be partially due to random mutation—to chaos and chance—these pseudo-random changes still require an environment or context in which to occur. Indeed, the importance of context should be far from a revelation since evolutionary theory all the way back to Charles Darwin's initial observations and, indeed, pre-Darwinian evolutionary theory, made this point clear. However, the influence and importance of the environment is something which appears to have been marginalised or lost altogether in genetically deterministic theories such as Dawkins' 'selfish gene' concept. *Diaspora* explicates these processes through the function of the conceptory, so that in the novel the importance of *context* is re-emphasised. While the inextricability of the environment may be normalised to the point of invisibility in contemporary culture, translation to a completely constructed digital context highlights the inescapable importance of environment/context *and* genetic influences *interacting* to evolve and produce life.[44]

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[43] Indeed, even 'informatic' forms are to some extent still material, albeit on a tiny scale. Electrical charges, however information is stored or conveyed, still takes *some matter* (even if a minuscule amount).

[44] Hayles, *How We Became Posthuman*, p. 224, notes that in arguing for the possibility of *natural* life occurring within an *artificial* medium, normalises informatic life to the point where form automatically equals life, regardless of the specificities of matter. I am employing *Diaspora* in this instance to explore

Egan's novel emphasises this point forcefully at an analogical level with the material world, working backward from a digital context, and also speculating that even if artificial life is possible, it is only possible within an artificial environment. Context is always already imperative, never peripheral.

For the fleshers in *Diaspora*—those characters still both materially and biologically embodied—their close relationship with the environment is markedly evident. When Inoshiro and Yatima, citizens using borrowed robot bodies, meet the flesher Orlando, they observe his strong symbiotic relationship with the organic jungle surrounding his home. As the citizens follow Orlando through the expansive and almost impenetrable jungle, 'the plants were sensing his presence, [and] they responded to it swiftly: leaves curled up, spines withdrawing like snails' stalks, sprawling shrubs contracting into tight cores, and whole protruding branches suddenly hanging limp' (68). Even when they reach Orlando's home, they discover not a barren, metallic structure, but rather an organic one, which is described as, 'alive. Barely. It was sprouting twigs and leave all over when it was growing, but now it's only metabolising enough for repairs, and a little active air-conditioning' (72).

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the speculative '*what if* ', of asking how artificial life might be *conceived*, and how these reflections voice concerns and presumptions of contemporary technoculture, not how artificial life may or may not actually eventuate. I would counter Hayles' point, only in this specific instance, by arguing that if the citizens are primarily informatic form, then at least as important are the specific forms of the constructed digital environment around them. The conceptory and polises are thus either as much matter as the citizens are or, alternatively, the citizens, polises and conceptory are all mutually reliant forms. However, I should stress, this chapter is still primarily about extrapolating ideas which reflect upon material life-as-it-is, not dwelling upon the minute specifics of life-as-it-may-be in a scientific context.

While these initial descriptions of the relationship between fleshers and their environment certainly appear different to contemporary culture, they nevertheless appear to paint a familiar hierarchical picture with the fleshers at the pinnacle, and the environment below. However, instead of only the environment being manipulated to respond to fleshers, the reverse is also true: through genetic manipulation, fleshers have been tailoring *themselves* to suit the environment(s) around them. Thousands of different and disparate flesher groups have emerged, with everything from minor adaptations to what could be called species-level changes. Moreover, the key to these changes appears to be adaptation to their ecological surrounds. For example, ocean-dwelling fleshers not only have gills and webbed digits, but also have different neurological structures and instincts since 'no one can survive in the ocean … without the right hardwired reflexes' (74). The relationship between the environment and fleshers thus appears far more dialogically symbiotic than in contemporary society. The fleshers actually hold a strong disdain for anyone who maintains a utilitarian view of the environment. When discussing the possibility of visiting other planets, Liana, the leader of Orlando's community, comments:

> Better gleisners out there than fleshers. Can you imagine *statics* in space? They'd probably have terraformed Mars by now. The gleisners have barely touched the planet; mostly they've just surveyed it from orbit. They're not vandals. They're not *colonists.* (80; italics in original)

The link between derogatorily-named unmodified human 'statics' and colonial ideology also suggests that the term 'statics' is not only due to their disavowal of genetic manipulation, but also because of a perceived ideological and discursive stagnation. Moreover, the ideology which statics hold aligns closely with modernist utilitarian values and a completely anthropocentric worldview. Their reductive view casts nature

and the environment as timeless, unchanging and (almost Edenic) resources. Indeed, the 'static's' perspectives correlate strongly with those of Paul Durham and the Copies in *Permutation City* who treat the digital world of Elysium as a completely malleable, endless resource. For fleshers, both humanity and the environment are perpetually changing, and the needs of both need to be symbiotically and reflexively accommodated. Indeed, the alignment of the different groups of fleshers with their specific environmental spaces is so strong that it is actually threatening to make the gaps between different groups of fleshers further than that between different species.

The central motivation of Orlando's community is to try to make connections between different flesher communities and to prevent the chasm separating them widening any further. They call themselves, unsurprisingly, bridgers. As Liana explains, there have been so many 'artificial genetic changes' (74) in the flesher population, all the way from minor tweaking of diet and metabolism to the construction of radically different psychology and mental architecture, that:

> some species of exuberants have changed *so much* that they can't communicate with anyone else any more. Different groups have rushed off in their own directions, trying out new kinds of minds – and now they can barely make sense of each other, even with software intermediaries. It's not just a question of language – or at least, not the simple question that language was for the statics, when everyone had basically identical brains. Once different communities start carving up the world into different categories, and caring about wildly different things, it becomes impossible to have a global culture … We're fragmenting. We're losing each other. (75)

The bridgers, by contrast, are trying to maintain the embodied material connections between *all* the disparate flesher groups. Each bridger has some traits of the different flesher populations, but also has enough common ground to be able to communicate with some of the other groups as well. Each bridger is also different to every other, but

with enough similarities to communicate with several of the bridgers around them with shared traits. Thus between the entire bridger community, they are trying to 'plug the gaps' (75), so that instead of giving rise to completely distinct groups which cannot comprehend one another, across the breadth of the bridger community it is possible to form a human chain of communication where every trait from every flesher community is covered. As Liana explains:

> no one is cut off, no one is alienated, because any given person's "circle" – the group of people with whom they can easily communicate – always overlaps with someone else's, someone outside the first circle … there'll always be a chain of living relatives who can bridge the gap. With a few intermediaries – right now, four at the most – any bridger can communicate with any other. (76)

Moreover, since the bridgers can communicate across the entire spectrum of the flesher population, they also embody the means for every flesher across the entire globe to communicate with every other. The bridger ethos of communication is also inherently tied to cooperation and community; alone the bridgers can achieve little, but together they can network the entire globe.

At this juncture, it is important to note *how* language and communication are thought to operate in *Diaspora*. Language is not simply a matter of code or information, since even 'software intermediaries' cannot facilitate communication between fleshers with substantially different material traits. Language, or more accurately communication *per se*, is described as always embedded not only in a cultural and social context, but also in the specific physiological and psychological context of each individual's organic mind and body. Language in *Diaspora* thus reflects N. Katherine Hayles' argument for the 'materiality of informatics' wherein communication, and thus all information, always involves embodied contextualisation within 'the specifics of place, time, physiology and

culture'.[45] Readers are reminded not only that language and communication are referential, but that the first level of referentiality is to the nodal and material organic context in which language originates for every individual. Indeed, even the citizens in borrowed robotic form realise how intrinsic embodiment is to communication as they struggle comically with the most materially mundane gestures: Yatima attempts to shake hands when people offer theirs in greeting but finds doing so 'an extraordinarily complex dynamical problem'; Yatima is later ridiculously pleased with a more gendered performance after 'beginning to get the hang of doing it without either offering too much resistance, or merely letting vis arm hang limp' (71, 72-73). By implication, the citizens may be virtually embodied in their digital polis lives, but this artificial embodiment provides a quite different context, and thus different modes of communication. When traversing the material world they must learn to bridge contextual differences as much as the partially alienated flesher communities.

The importance of embodiment and environment in terms of communication and, more broadly, epistemology and ontology does not create a rigid boundary between nature and technology for the bridgers. Rather, just as fleshers are mutually adaptive with the environment, they are also inextricably intertwined with technology. For the bridgers the sense of hybridity with technology is most obviously pronounced. Orlando explains that they:

> had tailored themselves to the point where any individual could rewrite parts of vis own genome by injecting a new sequence into the blood stream, bracketed by

[45] Hayles, *How We Became Posthuman*, p.155.

> suitable primers for substitution enzymes, wrapped in a lipid capsule with surface proteins keyed to the appropriate cell types. If the precursors of the gamete were targeted, the modification was made heritable. Female bridgers no longer generated all their ova while still foetuses, like statics did, but grew one as required, and sperm and ova production – let alone the preparation of the womb for implantation of a fertilised egg – only occurred if the right hormones, available from specially tailored plants, were ingested. About two-thirds of the bridgers were single-gendered; the rest were hermaphroditic or parthenogenetic-asexual, in the manner of certain species of exuberants. (77)

Following Sarah Kember's use of artificial life terminology, the entire flesher population evokes the mode of *convergence*, the increasing intersection in the 'neo-biological age …between natural and artificial systems.'[46] The bridgers cross not only material and community boundaries but also, in humanist terms, the ontological boundary between artificial and natural as well. Concurrently, use of genetic and genomic technologies at times *during* the bridgers' lives, rather than exclusively as the means to *create or begin* life, metaphorically refutes part of Dawkins' selfish gene thesis. In *Diaspora*, genes are being utilised *by* the bridgers for *their* aims, not the other way around. Nor are the supposed 'universal replicators' of the bridgers' genetic structure at birth sacrosanct since these structures may be willingly altered during a bridger's lifespan. Similarly, while genetic manipulation and changes may have caused different flesher communities to grow apart and alienate, the bridgers have simultaneously employed genetic technologies to bridge or re-network these communities. Connections with the environment are also heightened through the use of genetic technologies, as in the use of tailored plants to grow hormones needed for bridger reproduction.

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[46] Kember, *Cyberfeminism*, p. 8.

While some may counter that the technoscientific intervention in reproduction is parthenogenic—a masculine fantasy of appropriating reproduction from women, as seen in the character of Paul Durham in *Permutation City*—it is worth noting that these interventions have not reinforced gender boundaries and dichotomies. Rather, these technologies have increased the fluidity and diversity of the whole concept of gender, now including masculine and feminine (in differing forms), and also hermaphroditic and asexual. Moreover, it is powerfully symbolic that Liana, the Bridgers' most accomplished geneticist, without whom the Bridgers 'wouldn't stand a chance,' is female (73). It is also worth noting that Orlando, one of the key bridgers, is more than likely named after the character in Virginia Woolf's *Orlando* who both shifts genders throughout the novel and lives an 'unnaturally' long life.[47] The bridger community is not only convergent, then, but also powerfully evokes Donna Haraway's ironic concept of the cyborg, of a purposeful fusion of human and technology in both material and ontological terms with an inherently destabilising gender politics.[48] Thus, in *Diaspora*, even for the materially embodied characters and communities, technology and artificiality are almost as much a part of everyday existence as they are for the artificial life polis citizens.

Despite the convergent ontology of the fleshers, when Yatima and Inoshiro visit the bridgers a second time some decades later, many of the fleshers reveal their less than

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[47] See Virginia Woolf, *Orlando*, 1928, New ed, London, Penguin, 1993.
[48] See, in particular, Donna J Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminist in the Late Twentieth Century," *Simians, Cyborgs, and Women: The Reinvention of Nature*, New York, Routledge, 1991.

flattering concepts of what the potential for life in an exclusively digital form entails. The fleshers react badly since the citizens carry the tragic news that the surface of the Earth is about to become completely unable to support organic life due to a natural 'gamma-ray burster' which would flood the world with gamma radiation. When Yatima and Inoshiro address a convocation of the bridgers and representatives of most flesher communities, they admit that they have brought 'Introdus nanoware' with them; that is, nanotechnology for the express purpose of 'recording' a biological flesher's mental and physical structures and converting them into code, to 'translate' them into digital, citizen form. The crowd's vitriolic response is to sever Yatima's robotic arm holding the nanoware and melt it. Yatima exclaims that this is a whole new 'level of paranoia' on the fleshers' part but, as it turns out, not entirely without justification (115). During the convocation, some fleshers accuse the citizens of being 'simulacra of the shadows of departed cowards' and claim that in the polises they are 'fleeing from the real world of pain and ecstasy into your nightmare of perfectibility … your citadels of infinite blandness' (118). For many fleshers, the polises are completely without meaning since in their informatic form, they hold no intrinsic limits for subjectivity, temporality or mortality, at least not recognisably so. Without corporeal embodiment, it seems, there is nothing to struggle against, thus making the polises cowardly since they house some citizens who had been transformed from flesh to code, seemingly to escape the hardships of everyday material life. For the embodied fleshers, struggle is inherent to life. The fleshers make perfectly clear that they will weather the coming gamma rays and try to adapt to an atmosphere saturated with them. When the burst hits the Earth, the intensity is so strong that many die immediately, or are horribly hurt. Yatima finds Orlando,

dying, and tries to convince him to accept the Introdus nanoware (which Yatima has salvaged), but he declines. However, when Orlando is near death, Yatima injects the nanoware anyway, unable to respect (or perhaps even comprehend) Orlando's choice of embodied mortality and Orlando's resulting transformation is without consent, similar to the shifting gender of the protagonist in Virginia Woolf's novel[49] of the same name:

> Waves of nanoware were sweeping through Orlando's body, shutting down nerves and sealing off blood vessels to minimise the shock of invasion, leaving a moist pink residue on the rubble as flesh was read and then cannibalised for energy. Within seconds, all the waves converged to form a grey mask over his face, which bored down to the skull and then ate through it. The shrinking core of nanoware spat fluid and steam, reading and encoding crucial synaptic properties, compressing the brain into an ever-tighter description of itself, discarding redundancies as waste. Inoshiro stooped down and picked up the end product: a crystalline sphere, a molecular memory containing a snapshot of everything Orlando had been. (141-2)

This gruesome description, even more violent than Hans Moravec's gothic fantasy of converting biological brains to code[50], readily explains some of the hesitancy fleshers voice regarding the conversion process! Moreover, as Catherine Waldby argued regarding the Visible Human Project, the Introdus nanoware seemingly 'saving' (something of) Orlando posits the polises as post-natural spaces of 'posthumous vitality, a space where the non-reversibility of everyday time might be arrested and redirected, the dead brought "back."'[51] The radical discontinuity between the biological material world and the digital realm in part explains why so many fleshers see digital existence as not-life-at-all. However, the resulting informatic digital 'life' also suggests that Yatima

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[49] Woolf, *Orlando*, 1993.
[50] Hans Moravec, *Mind Children: The Future of Robot and Human Intelligence*, Cambridge, Mass., Harvard University Press, 1988, pp. 109-110, as discussed in chapter one.
[51] Waldby, *The Visible Human Project*, p. 36.

and the citizens are gripped by the same IatroGenic desire that Paul Durham held in *Permutation City*. The citizens maintain the fantasy of 'programmable matter' in that they apparently want completely controllable informatic bodies (if bodies at all) in preference to the messy seas of contingency, unpredictability and mor(t)ality of biological life.[52] The 'paranoid' accusations of the fleshers about Yatima's intentions, no matter how well intentioned, appear justified.

Within the Coalition of Polises the destruction of the Earth's surface is felt in an entirely different manner: despite extensive modelling of the astronomical universe, the tragedy was *not* predicted by the citizens' models, proving that they do not fully comprehend the natural world of which they are inescapably (given the materiality of the polis hardware, at least) part. Thus while the fleshers' accusation that the citizens view the polises as an 'infinity' of malleable time and space may have almost been true at one point, the natural disaster of Lacerta (the name of the two neutron stars which collided causing the gamma-ray burster, which now acts as a shorthand referring to the tragedy) has reinforced their sense of finitude and materiality. The citizens view a failure of their models to predict such a disaster as a general failure of their informatic resources to predictively and preemptively determine all threats to their existence. As Yatima laments:

> forget Lacerta, forget gamma-ray bursts! Twenty years ago, we thought the greatest risk to the Earth was an asteroid strike! We can't be complacent just because we survived this, and the fleshers didn't; Lacerta proves that *we don't*

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[52] Waldby, *The Visible Human Project*, p. 113.

> *know* how the universe works – and it's the things we don't know that will kill us. Or do you think we're safe here in the polises forever? (146)

Yatima, however, is shocked that Inoshiro answers the last rhetorical question in the affirmative. Inoshiro's post-natural digital existence may guarantee longevity not available to biological fleshers, but that also means the ability to feel pain and suffering for a seeming eternity. Inoshiro, having seen so much death and agony during the destruction of the Earth's surface, grafts with an 'ancient memetic replicator' which 'impose[s] a hermetically sealed package of beliefs … about the futility of striving … including explicit renunciations of every mode of reason able to illuminate the core beliefs' failings' (148). Inoshiro's use of an 'ancient meme' offers further refutation and warnings about the seemingly destructive and single-minded view imposed by memetics and the selfish gene thesis. Inoshiro's decision also metaphorically argues that digital existence provides no easy escape from the consequences of the material world. As such, the resulting 'Inoshiro' citizen may still survive for aeons but Yatima recognises that the new Inoshiro '*is not Inoshiro*' and mourns 'Lacerta's last victim' (148, 149). Yatima, by contrast, decides to move to the Carter-Zimmerman polis since they have decided to address Lacerta by scattering in a Diaspora. They choose to send out spacecraft carrying copies of Carter-Zimmerman in the hope, almost *Star Trek* style, of finding 'new life and new civilisations' which can explain the secrets of the universe, or at least facilitate their escape from or prevention of another Lacerta.[53]

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[53] From the opening dialogue of the television series *Star Trek*, creator Gene Roddenberry, NBC, 1966-1969 (and in various other forms including spin-off television series, films and so forth).

The first of the cloned Carter-Zimmerman polises in the Diaspora reaches the star Vega with a single orbiting planet, Orpheus, which is inhabited by some form of biological life. Alien life, although a monumental discovery in any form, disappoints some of the citizens at first. The aliens appear to be no more intelligent or diverse than seaweed, leading Paolo to lament that they were unlikely to 'get much cosmic guidance from kelp' (223). However, after more detailed analysis, the Orphean life turns out to be intelligent in some fashion, nicknamed 'Wang's Carpets' after its structure. However, it is completely inwardly focused, unable to communicate or even perceive the world around it. Embodied life which develops within but is unable to actively comprehend their environment is deeply disturbing for citizens such as Paolo who highly value materiality and the philosophy of embodiment:

> Life – embedded in the accidental computations of Wang's Carpets, with no possibility of relating to the world outside. This was an affront to Carter-Zimmerman's whole philosophy: if nature had evolved 'organisms' as divorced from reality as the inhabitants of the most inward-looking polis, where was the privileged status of the physical universe, the clear distinction between reality and illusion? (236)

Paolo's concerns hold considerable weight, both problematising the division between reality and illusion, and between physical and digital, as well as highlighting the limitations of the concept of 'reality' being employed. Wang's Carpets' replicating polis-like processes without technological intervention illuminate the fact that the polises are simply another permutation of life which *could* occur 'naturally' (here meaning with no technological support). The biological occurrence of inward-focused life which would fall under the rubric of informatic and artificial within the citizens' ontological categories points to the myth that the polises are not related to the natural world. Moreover, the beginnings of citizen life originate from mapped biological

processes and many citizens were previously embodied fleshers. However, rather than giving the artificial and natural comparable ontological authenticity, the now digital Orlando compares life which is 'really out here' to the simulated evolution of polises which chose to stay on Earth and not participate in the Diaspora:

> Ashton-Laval intervened in its so called "evolutionary" simulations so many times that they might as well have built the end products in an act of creation lasting six days. The wanted talking reptiles and – *mirabile dictu!* – they got talking reptiles. There are self-modified citizens in *this polis* more alien than the aliens in Ashton-Laval. (216-7)

Orlando's tirade reminds readers of Sarah Kember's point about the seeming paradox of 'evolving' artificial life since it actually requires human creators. For Orlando, simulated and modelled evolution is oxymoronic: only evolution in biological and embodied form is 'real'. As another citizen reminds him, without travelling to Orpheus, 'we'd never have had the chance to tell the solipsists of Ashton-Laval that all their elaborate invented life-forms and exotic imaginary universes pale into insignificance compared to what's really out here' (238). The reification of 'what's really out here', what has evolved through natural processes, and the implication that even Carter-Zimmerman is not that far removed from the natural world reflects Kember's argument about the 'new biological hegemony' within the technosciences. Rather than challenging any dominance of the natural and biological, Wang's Carpets destabilise the artificial/natural dichotomy even further than the citizens' convergent ontology. However, in direct contradiction, 'the natural' regains categorical dominance. Although a natural hegemony is less problematic since it occurs hand in hand with the broadening of 'the natural' to the point where it encompasses far more than the liberal humanist conception of 'natural', dichotomously opposed to technological. Indeed, Orlando embraces the contradictions of the natural seemingly meshing with the technological and

proclaims that the biological Wang's Carpets 'will be the perfect hook for the marginal polises. "Travel through real space to witness a truly alien virtual reality." We can sell it as a synthesis of the two world views' (239).

After Orpheus, the next alien life encountered is in the 'macrosphere', a five-dimensional universe intersecting the citizens' indigenous one. It has been discovered and entered following clues left by a seemingly more intelligent alien race. When the polis reaches the first inhabited planet, Poincaré, they discover aliens who physically resemble slug-like creatures. However, the aliens, nicknamed Hermits, may be intelligent enough to have engineered their environment since they appear to have no natural predators and 'the whole ecosystem is slightly skewed in their favour' (308). The citizens create robots that resemble Hermits and can mimic their movements but cannot work out how to use these robots to communicate and interact with the real Hermits. Orlando, however, realises that embodied communication cannot be just synthesised and modelled mathematically: it requires physical interaction and embodied referentiality to work.

Orlando, being closest to embodiment of all those on the Diaspora, knows that he must be a bridger, but not in the reassuringly communal sense of bridger families, as on Earth. Rather, Orlando realises he must bridge the chasm both materially, utilising the Hermit robot, and digitally, with altered clones using Orlando himself as template. He clones himself and his virtual environment in the 5-dimensions of the macrosphere, creates a window from his original (three dimensional) world, and then clones that second version

again, this time including, as close as he can estimate, 'the Hermit body-image and senses.' He then, most significantly, instructs the clone software to '[t]ear out every symbol relating to my old body, my old senses' (317). The third clone, as with the second, immediately recognises that he, while sharing a certain heritage, is no longer Orlando[54]:

> The third altered clone of Orlando peered back down the tunnel of scapes, past vis immediate progenitor, searching in vain for a glimpse of vis incomprehensible great-grandparent. *There was a world where that being had lived* … but ve could neither name it nor clearly imagine it. With the symbols gone for most of the original's episodic memories, the clone's strongest inheritance was a sense of urgency, yet the edges of the lost memories still ached, like the vestiges of some plotless, senseless, unrecoverable dream of love and belonging. (318)

The cloning and altering continues until there are six different derivative clones. The final one, so far removed from the original as to be completely incomprehensible, finally takes control of the Hermit robot and immediately begins to communicate with the real Hermits. The bridging of Orlando's clones highlights the importance of embodied material referentiality to intelligent communication. The distant clone manages to communicate with the Hermits both because it now has a referential mental architecture somewhere in the vicinity of the Hermits' and also it no longer has a citizen-like referential structure. What is *not* part of the clone's body and cognitive processes appears almost as important as what is part. Removing the old symbols and references to the three dimensional Orlando citizen (who still choses to act *as if* organically

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[54] Elsewhere in *Diaspora* (especially pp. 228-229) readers discover that the 'original' Orlando citizen who remained in the Earth Carter-Zimmerman polis has killed himself. The Orlando at Orpheus reassures his companions he is not about to repeat the Earth-Orlando's decision. Even though the clones on the Diaspora began as identical to the original, the point it powerfully driven home that interaction with their differing contexts always produces *different people*. The myth of cloning as unproblematically replicating an individual exactly, even if it is possible to clone memories, is thus powerfully dismissed.

embodied in most situations) loses one mode of thinking and communication, allowing another to form. Orlando's bridging with the Hermits also refutes the idea of boxology or atomisation in the technosciences, which Kember defines as 'literally the way in which behaviours are broken down into fairly isolated modules' and treated as completely meaningful in and by themselves.[55] The failure of computational models, but the success of the embodied Orlando(s), points to the notion of meaningful communication as part of an entire system of which the body and brain are both intrinsic, inseparable parts. The citizens' models could not mimic a whole Hermit system complete with body, only the scant information they had from observing the Hermits in the citizens' terms. This is especially significant since Orlando has always tired to live *as if still organically embodied.* The implication, then, is that bridging from one intelligent being to another always involves bodies and embodiment as much as any informatics. Intelligent bridges require both bodies *and* minds.

The Hermits turn out not only to have engineered themselves, but also their entire environment. As a message passed up Orlando's clone bridge explains:

> They're not just immune to climate change and population swings; they're immune to mutation, new species arising – anything short of Poincaré going supernova. Everything's free to evolve around them, but they sit at a fixed point in the system while it changes. (319)

The original Orlando's reaction to the Hermits' status is mixed: amazed at their level of technological ability to completely engineer their dynamic but hierarchically stable environment, but simultaneously aghast at the concept of the Hermits engineering

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[55] Kember, *Cyberfeminism*, pp. 193-4.

themselves into permanent evolutionary stagnation. For Orlando, material embodiment always meant being part of the ecosystem and for both that ecosystem and the inhabitants to *always be in a state of change*. The stagnant Hermits in their safe, secure but completely unchanging form are more difficult for him to comprehend than even the inward-focused Wang's Carpets. Technology in this instance appears to be able to undermine the facets of materiality and embodiment which Orlando holds so highly. While embodiment is still Orlando's preference, the Hermits force the admission that embodiment does not *always* entail dynamic evolutionary change. However, the Hermits do provide directions to a second macrosphere where the citizens can find other aliens who can provide answers to the origins of the universe and its workings, making Orlando's traumatic bridging worthwhile.

Having completed their task, Orlando and the six clones turn to the question of their own future. Orlando tells his first clone that he is willing to merge with all of them, to incorporate their memories into his own, but the clone asks:

> How much weight can you bear? How much longing for a world you'll never see again? How much claustrophobia? How much … [f]rustration at words you can no longer speak? (327)

While it may be possible to integrate some of the information about each clone's memories into the original, the first clone's point is that it would be seven different types of referential memories from seven different complex entities in one referential system. Without the points of reference provided by each of the altered clones' bodies and minds, Orlando would always have memories that he could never articulate or assimilate within his own materially referential worldview. As it happens, most of the clones opt to die, while the seventh, the clone which actually communicated with the Hermits,

decides to biofacture an organic body (rather than use the robot mimic) and join the Hermits. Despite the seventh's origins, the draw of embodiment and material community is too powerful. Only the first clone, the closest to the original, accepts the offer to merge. The clone concedes that in all of Orlando's memories, his will be only a tiny part, but that part will be a 'tiny wound. A subtle ache. A reminder that you once embraced something larger than you thought you could' (328). The clone's merging into Orlando leaves the original with a sense of lack caused by 'memories' of an embodied form 'he' never had. Metaphorically, the intrinsic importance of individual embodiment to subjective memory, thought and communication is again reinforced.

In the second macrosphere, the citizens encounter not the aliens they seek, but rather a non-sentient software program called a 'Contingency Handler'. The advanced program has access to all the recorded knowledge of the aliens which the Carter-Zimmerman Diaspora was seeking, and immediately explains the physics of the universe(s), including a dire warning of the original universe's demise. The Diaspora's mission is successful, and Orlando immediately departs for Earth and the other Carter-Zimmerman polises to share the news and encourage them to travel into the new macrosphere. The Contingency Handler informs them is 'enough room for everyone' (337). However, Yatima and Paolo, Orlando's son, choose to continue following the aliens who left clues as to their future destinations.

As they travel through different macrospheres, the pair encounter massive 'artifacts' of unknown origin, seemingly containing vast stores of information. Unable to decipher

the artifacts, Yatima and Paolo continue following the aliens' artifactual trail for thousands of years across millions of macrospheres, until they reach a final universe with nothing but 'empty interstellar space' (357). In the void, Paolo finally realises that the artifacts 'taken together … comprised a giant sculpture spanning more than a quadrillion dimensions':

> a structure that dwarfed universes, but touched each one only lightly. They [the aliens Yatima and Paolo are seeking] hadn't turned whole worlds to rubble, they hadn't reshaped galaxies in their image. Having evolved on some distant, finite world, they'd inherited the most valuable survival trait of all. Restraint. (359)

Ironically, the last message from the aliens Yatima and Paolo sought is not about infinity or transcendence or immortality, but rather the direct opposite: the inescapable importance of limits, mortality and finitude. This scene echoes and inverts the discovery of the massive monolith in the last sequence of Kubrick's *2001* called 'and Beyond the Infinite'. While the film's monolith supposedly opens the gate to infinity, the artifact Paola and Yatima encounter does the opposite and represents the intrinsic value of finitude. For Paolo, who also shared Orlando's strong philosophy of embodiment, the message is obvious and Paolo immediately prepares to let go, to follow the artifact-makers, and accept a mortal end. Paolo refracts Donna Haraway's argument that 'the affirmation of dying seems absolutely fundamental. Affirmation not in the sense of glorifying death but in the sense—to put it bluntly—that without mortality, we're nothing.'[56] Returning to Norbert Wiener's argument that information *is* life,[57] Paolo's end and the alien's final message reinforces the idea that information may be *part* of life,

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[56] Donna Haraway and Thyrza Nichols Goodeve, *How Like a Leaf*, London and New York, Routledge, 2000, p. 116.
[57] Hayles, *How We Became Posthuman*, p. 103, as discussed in chapter one.

but limits, entropy and materiality (which inescapably also entails mortality) are essential, too. For Yatima, the message is not enough. Yatima still believes that 'in the end, there is only mathematics', and that is enough reason to continue 'living' (361). Yatima, whose artificial life began as a mind seed in the Konishi polis, denies the necessity of finitude, and the novel ends with a tragic image of Yatima, alone in an empty universe, trying to find the still hidden secrets of informatic life. Yatima, whose informatic form guarantees a longevity bordering on immortality, ends up alone, an orphan now in every sense, rejecting the material origins and (digitally recreated) naturalistic processes which began Yatima's artificial life.

Greg Egan's *Diaspora* facilitates the exploration of both the possibilities of artificial life and the use of artificiality to metaphorically engage with contemporary concerns and issues. From the citizen mind seeds grown in Konishi polis to the Diaspora of Carter-Zimmerman, the citizens' tales explicate a complex and intricate story about *life-as-we-know-it*. Richard Dawkins' thesis about selfish genes and universally replicating memes is rejected out of hand. Emergence, evolution and the implicit importance of dynamic change are upheld, but only when change involves the interaction of both subjects *and* the environment of which they are part. Similarly, the convergence of artificial and natural systems is seen as inevitable, but only in a manner which sees both natural and technological systems meaningfully intertwining with neither completely dominant. *Diaspora*'s central theme is undoubtably the importance of bridging. Materiality and informatics are both part of the future for human (and human derived) subjects, and the consistent convergent ontology in Egan's novel highlights the importance of both co-

existing symbiotically. Neither appear to be able to meaningfully exist without the other. For the citizens, the Diaspora to discover the secrets of the universe also becomes a Diaspora of contextual knowledge about bodies and a scattering of material ideas. It concludes with a final message and revelation that mortality and finitude are just as important for digital life as for material life and that 'artificiality' by no means unproblematically divides the embodied from disembodied or natural from digital.

Convergent Conclusions

Reading the IatroGenic permutations from the Visible Human Project to Greg Egan's *Permutation City* and the further Diasporic subjectivities mapped in *Diaspora* entails the development of key critical perspectives about the discursive construction of artificial life narratives. Moments of digital genesis immediately and unavoidably lead to the questioning of existing categories of subjectivity and materiality in the face of the digital and artificial. Currents of IatroGenic Desire in contemporary culture extend readily through speculative writing. They cast artificial life in an unstable ontological framework, with potential for either challenging or reinforcing aspects of liberal humanist traditions. In *Permutation City*, the human-like top-down Copies treat the shift of context from material to digital as a moment to reintroduce colonial hierarchies and unequal power structures. The bottom-up artificial life Lambertians thus perform the role of IatroGenic Life, acting as an 'other' against which the Copies can define their own destabilising sense of self. However, such categorisation proves destructive and the attempt to reproduce an artificial other ends up destroying the digital new world of Elysium due in large part to the Lambertians' fidelity to embodiment. Even in artificial contexts, bodies still matter.

In *Diaspora*, the artificial life citizens are no longer subjugated by human power and epistemologies. Their own emergent lives give rise to questions about life itself and the 'naturalness' of theories such as evolution. The life of polis citizens on the one hand reinforce natural systems, with bottom-up life only being possible utilising translated biological processes. On the other hand, these digital replications point to the ongoing continuity between the natural and artificial, as well reinforcing the intrinsic importance of environment and context. The character of Orlando and the philosophy of bridging which he brings from the material world to the artificial polises then extends the idea of convergence. Bridging reinforces the inescapability of both information and embodiment for intelligent life, as well the importance of links between the digital and material worlds. The final tragic images of the citizen Yatima alone in the void highlight the importance of restraint and finitude in the face of digital information's supposedly infinite character. While both novels point to the convergence between artificial and material lives, a better way of expressing these themes is the idea of *symbiosis*. The artificial life narratives examined do not separate 'artificial' from 'life', but rather point to the space adjoining these words, a space that could be seen as pointing to the symbiotic relationship between the two terms. The digital and artificial, in both these texts and culture more broadly, exist symbiotically with life, materiality and 'the natural'. Narratives of artificial life also illuminate that symbiosis means all of these concepts should be addressed holistically, never in opposition. Artificial life is our responsibility and our life as well.

CHAPTER 3: ARTIFICIAL SPACE

Introduction

> The space of a tactic is the space of the other.[1]
>
> - Michel de Certeau, *The Practice of Everyday Life*

> The only way through a crisis of space is to invent a new space.[2]
>
> - Fredric Jameson, *Universal Abandon?*

Unlike the previous two chapters which dealt with existing concepts already replete with their own contested ontologies and histories—namely Artificial Intelligence and Artificial Life—this chapter proposes and tentatively maps the new conceptual terrain of Artificial Space. Ideas of space and spatiality have undergone numerous challenges and rearticulations in the past few decades. Various postmodern theorists have convincingly argued that space is a constructed category and concept, completely dependent on the specific and subjective instances of its deployment. In the mid-1980s, concurrent with the peak of postmodern theory, William Gibson in his cyberpunk novel *Neuromancer* speculated about a new concept of spatiality facilitated by the combination of networked computing and global telecommunications: cyberspace. The notion of cyberspace has since proven to be a flashpoint for vigorous theoretical engagements with the intersections of technology, subjectivity and spatiality. Responses to *Neuromancer*

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[1] Michel de Certeau, *The Practice of Everyday Life*, Trans. Steven Rendall, Los Angeles, University of California Press, 1984, p. 37.

[2] Anders Stephenson, 'Regarding Postmodernism -- A Conversation with Fredric Jameson' in *Universal Abandon? The Politics of Postmodernism*, ed. Andrew Ross, Minneapolis, University of Minnesota Press, 1988, p. 18.

ranged from celebrating its disruption of rigid notions of both the subject and space to decrying its technological reification of gendered divisions of mind and body in cyberspace.[3] Moreover, these debates have become increasingly relevant as Gibson's speculative cyberspace metaphor has been widely, and often uncritically, applied to the material reality of the internet and world wide web.

Despite Gibson's body of work spanning eight novels, analysis of his conceptualisation of space is almost always limited to either *Neuromancer* exclusively or, at times, to the broader 'Sprawl' trilogy which commences with *Neuromancer*.[4] Nevertheless, Gibson's second loose trilogy—commonly referred to as the 'Bridge' trilogy, consisting of *Virtual Light*, *Idoru* and *All Tomorrow's Parties*—also contains complex and provocative speculation about new forms of space which are emerging, and have emerged, in recent years. Moreover, despite having coined the term cyberspace in *Neuromancer*, in the Bridge trilogy Gibson purposefully avoids any use of the word. Instead, these texts imaginatively illuminate new spatial terrains that are developing in response to a world in which the internet plays a substantial role, but is not the only space which matters. Indeed, digital and material spaces are closely aligned in some respects, while radically divergent in others, and the artificial spaces Gibson maps exist in both realms, often

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[3] See Veronica Hollinger, "Cybernetic Deconstructions: Cyberpunk and Postmodernism," *Mosaic*, 23.2, 1990, pp. 29-44 for a reading of the Sprawl trilogy as destabilizing traditional humanist notions of the subject, while Nicola Nixon, "Cyberpunk: Preparing the Ground for Revolution or Keeping the Boys Satisfied," *Science Fiction Studies*, 19, 1992, pp. 219-35, argues that cyberpunk is a masculine fantasy space which solidifies gendered dichotomies.

[4] The Sprawl trilogy—*Neuromancer* (1984; London: Voyager, 1995), *Count Zero* (1986; London: Voyager, 1995) and *Mona Lisa Overdrive* (1988; London: Voyager, 1995)—also sometimes includes a number of Gibson's short stories which are collected in *Burning Chrome*, London, Grafton, 1988.

linking the two in provocative ways which both interrogate and expand existing ideas of the human subject.

While Gibson's speculative fiction certainly captured the imagination of casual readers and theorists alike, one theorist whose work has also played a substantial role in the way space is understood is Michel de Certeau, a French cultural critic whose most recognised work, *The Practice of Everyday Life*, argues that meaning and power are far from one-way top-down systems. Indeed, de Certeau's overriding concern with 'the everyday' is thematically echoed in Gibson's writing, not least because Gibson has always maintained that his writing is extrapolated from the banal world he perceives *today*, not some distant future.[5] Moreover, de Certeau and Gibson also share common cause as both seek to illustrate the many spaces where the subject still has choice and agency despite a seemingly monolithic world around them. For de Certeau, these concerns are examined in part by developing the distinction between ideas of space and place.

Utilising military metaphors, de Certeau argues that place is authorised, official, as well as martially, commercially and governmentally regulated, and thus plays a top-down strategic role in trying to guide, limit and contain choices that individuals may make.[6] By contrast, through their everyday lives and their paths subjectively created through the world, individuals can often make their own maps[7], their own directions and thus their

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[5] *Cyberpunk*, [documentary], dir. Marianne Trench, Intercon Productions, 1990.
[6] de Certeau, *Practice of Everyday Life*, pp. 35-6.
[7] For de Certeau, the term 'tours' would be preferable to 'maps' as he argues that maps are a product of strategic systems, while tours are more dependent on subjective movement and are thus more tactical (see

own choices despite the rigidity of place; these moments of everyday life illuminate *space* which is a tactical mode inasmuch as it can temporarily exist both within and beyond the boundaries of place for specific, if often short-lived, reasons.[8] Moreover, de Certeau extended the place/space distinction beyond material engagement with the cityscape and argued that the processes of engaging with texts and 'reading' are themselves potentially tactical acts. However, since de Certeau wrote *The Practice of Everyday Life* in the 1970s, his engagement with media more broadly is understandably quite limited. In the 1990s, the application of tactical engagements with media texts, or 'poaching', was expanded, most notably by Henry Jenkins.[9] However, as recently as 2004, Mark Poster has argued that de Certeau's work lacked engagement with digital culture, and there has yet to be a substantial combination of de Certeau's models of spatial resistance with everyday life in the digital age.[10] This chapter aims to do exactly that, via a reading of William Gibson's Bridge trilogy through the theoretical lens provided by elements of de Certeau's *The Practice of Everyday Life*.

The following argument is broken into three sections. The first will focus on the ways that place has been further fortified, militarised, regulated and policed both in material terms and through the purposeful use of the expanding mediascape and digital

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de Certeau, *Practice of Everyday Life*, pp. 118-9). In this chapter, the idea of maps are not used in their strategic sense, but rather to suggest that in artificial spaces, subjects often create their own new maps and directions, facilitated by digital technologies.

[8] de Certeau, *Practice of Everyday Life*, pp. 36-7.

[9] See, for example, Henry Jenkins, *Textual Poachers: Television Fans and Participatory Culture*, New York & London, Routledge, 1992.

[10] Mark Poster, "Consumption and Digital Commodities in the Everyday" *Cultural Studies*, 18.2/3, 2004, p. 412.

technology as shown in the Bridge trilogy. The second section argues that the intensification of place also leads to new spaces of resistance in both the material form of the Bridge itself—a seemingly organic community living on the now-defunct San Francisco Bay Bridge—and in the digital form of The Walled City, an informatic recreation of the now-demolished Hong Kong autonomous zone of Hak Nam. Finally, the third section argues further that these new spaces re-emphasise the link between subjects, embodiment and space, culminating in the literal bridging of the digital and material through the deployment of nanotechnology.

The Fortification of Place in the Digital Age

> Not accessible to all, the information superhighway with its accelerated transfers of data, voice, and video is open only to those possessing the privileged corporate codes.[11]
>
> - Arthur Kroker and Michael Weinstein, *Data Trash*

> Welcome to Los Angeles, … Be glad you aren't taking the subway.[12]
>
> - William Gibson, *Virtual Light*.

The California that appears in the Bridge trilogy is simultaneously familiar due to its continuity with the existing state in the US, but also purposefully littered with differences easily, and often worryingly, extrapolated from existing social, political and technological configurations. If, as cultural critic Douglas Kellner has argued, William Gibson's novels can be read as 'mapping our present from the vantage point of [an]

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[11] Arthur Kroker and Michael Weinstein, *Data Trash*, New York, St. Martins Press, 1994, p. 19.
[12] William Gibson, *Virtual Light*, 1993; London, Penguin, 1994, p. 25. (Hereafter referred to in the body of the chapter as '*VL*'.)

imagined future, demonstrating the possible consequences of present trends of development', then the present mapped by the Bridge trilogy is markedly different from the concerns underlying the cultural geography of *Neuromancer* and the Sprawl trilogy.[13]

One reason that the Bridge novels resonate so strongly with contemporary issues is the shift in William Gibson's familiarity with technology between his earlier novels and the Bridge trilogy. While working on the cyberpunk Sprawl trilogy, Gibson points out he had never touched a computer, writing his stories on a manual typewriter, which he felt gave 'a certain edge in terms of imagination in that [he] wasn't really hindered by what was possible.'[14] However, Gibson's knowledge of technology became more anchored to existing forms between the two trilogies, with the Bridge novels being produced on a home computer. Nor was he alone in developing a more immediate relationship with personal computing. In the broader North American context, Western society in the early 1990s was gripped by an overwhelmingly optimistic greeting of the emergent 'information superhighway.' As 'cyberspace' escaped from the pages of science fiction into millions of Western homes, Arthur Kroker and Michael Weinstein argue that technophilia reached new heights, with Americans *en masse* embracing 'a stridently pro-technotopia movement, particularly in the mass media, typified by an obsession to the point of hysteria with emergent technologies, and with a consistent and very deliberate

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[13] Douglas Kellner, *Media Culture: Cultural Studies, Identity and Politics Between the Modern and the Postmodern*, London, Routledge, 1995, p. 299.
[14] *Cyberpunk*, [documentary], 1990.

attempt to shut down, silence, and exclude any perspectives critical of technotopia.'[15] Despite these utopian sentiments, one of the most immediate effects of the information superhighway was to add a new dimension to social and economic stratification, with those unable to access the new superhighway finding themselves lagging behind on the wrong side of what has become know as the digital divide.[16] Following similar lines, but developing more provocative terminology, Kroker and Weinstein argue that these people are the refuse of society's myopic technophilia, and in the rush to embrace the digital, those left behind are relegated to the status of 'data trash'. In William Gibson's earlier novels, those characters from the lower end of the socio-economic scale have still inexplicably managed somehow to gain access to state of the art technology. However, in the Bridge trilogy many characters are less fortunate and certainly less socially and economically mobile, remaining for the most part on the receiving end from those more technologically and informatically fortunate. Rather than facilitating the development of new spaces, for those on the wrong side of the digital divide, information technologies ostensibly appear to lock already struggling citizens into an even more rigidly bounded place; in an information economy they are discarded as data trash.

One front on which Gibson signals his heightened interest in those on the wrong side of the digital divide is through self-conscious parallels with his earlier cyberpunk work.[17]

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[15] Kroker and Weinstein, *Data Trash*, p. 4.
[16] The origins of the term 'digital divide' are widely debated and unclear. For more detail see Sharon Foster and Adrianna Borkowski, "Who Coined the Term?", *Access Denied*, c.2000, http://www1.soc.american.edu/students/ij/co_3/digitaldivide/index.htm, accessed 4 August 2005.
[17] The question as to whether the Bridge trilogy is actually cyberpunk or not is a debatable one, but given a number of differences, including Gibson's shift in sympathies from the technologically proficient to

In terms of broad plot and structure, *Virtual Light* mimics *Neuromancer* in a very direct and purposeful way, Gibson noting that the former is 'the most blatantly ironical text that I've ever produced.'[18] In *Neuromancer*, the unlikely team of Case, the 'console cowboy', and Molly, the cyborg razor girl meet in a plot orchestrated by unknown powers (eventually turning out to be the artificial intelligence Wintermute) and, after a series of adventures, manage to facilitate the merger of Wintermute and Neuromancer into a new cyberspace entity thereby radically altering the structure of the information world. By contrast, in *Virtual Light*, the unlikely team of Berry Rydell, the ex-cop (and then ex-rentacop), and Chevette Washington, the tough girl bicycle courier, meet through a series of accidents in a plot orchestrated by an unknown corporate power (eventually turning out to be the world's richest man, Cody Harwood). After a series of misadventures they manage to *prevent* Harwood and his partners from implementing a plan that would radically alter the structure of San Francisco using new forms of technology. The change in protagonists from the technologically hip Case and cyborg Molly to Rydell and Chevette, who between them share almost no technological know-how whatsoever, marks an at least partial shift in Gibson's sympathies and interest in the direction of the less technologically affluent. Moreover, Rydell and Chevette's ultimate goal to prevent rather than facilitate structural change through the deployment of new technologies illustrates a fictional world where technology has shifted from being

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those decidedly not, for the purposes of this chapter, the Bridge trilogy is considered post-cyberpunk. For a more detailed argument situating the Bridge trilogy as post-cyberpunk see Ross Farnell, "Posthuman Topologies: William Gibson's "Architexture" in *Virtual Light* and *Idoru*," *Science Fiction Studies*, 25.3, 1998, p. 463.

[18] William Gibson interviewed in Stephen Bolhafner, 'William Gibson: Making Light of the Cyberpunk Schtick', *Steve's Reads*, http://www.geocities.com/Area51/Zone/9923/gib1.html, 1993, accessed 8th March 2000, (originally *St Louis Post-Dispatch*, 29 August 1993, p. 3C).

predominantly a signifier of resistance—as in *Neuromancer*—to also signifying those things which should be resisted.

Gibson also distances himself from the technological revelry of the Sprawl trilogy in his Bridge novels by ironically redeploying the two key signifier of cyberpunk: hackers and their signature fashion accessory, mirrorshades.[19] In *Virtual Light*, the only mirrorshades to be found are those worn by Rydell's rentacop partner:

> Sublett had had allergies. He went into shock from various kinds of cleaners and solvents, so you couldn't get him to come into the car wash at all, ever. The allergies made him light sensitive, too, so he had to wear these mirrored contacts. What with the black IntenSecure uniform and his dry blond hair, the contacts made him look like some kind of Clan-assed Nazi robot. Which could get kind of complicated in the wrong store on Sunset, say three in the morning and all you really wanted was some mineral water and a Coke. But Rydell was always glad to have him on shift, because he was as determinedly nonviolent a rentacop as you were likely to find. (*VL*, 9)

The mirrorshades, the signifier of all that was hardwired, hard-edged and hip in the Sprawl trilogy, are now only to be found worn by a character who might be *mistaken* for a 'Clan-assed Nazi robot', but who has almost no access to high technology and actually deplores violence to the extent that in the two action scenes in which he is involved, he ends up either having debilitating allergic reactions to the chemically laden atmosphere of Los Angeles, or hiding in a cupboard. Gibson's self-parody continues in that Sublett and Rydell, far from being cyberpunks themselves, are actually the victims of hackers. During Rydell's last day as a rentacop, the hacker group 'Republic of Desire' break into the communications system of IntenSecure, the company for which Rydell and Sublett

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[19] If there was any doubt as to the iconic nature of mirrorshades for the cyberpunk movement it evaporated when Bruce Sterling edited *Mirrorshades: The Cyberpunk Anthology*.

work, and use false information to trick the duo into ramming their vehicle into a house they were told had hostages being held inside. However, it turns out that the Republic of Desire had been paid to cause trouble for the homeowners and, despite being hacked, blame has to be levelled somewhere and thus Rydell is fired. In the aftermath, Sublett wonders if the police will ever catch 'those hackers,' and concludes that their only motivation was that they were 'just *mean*' (*VL*, 37). Unlike the Sprawl novels, Gibson has placed Rydell and Sublett on the receiving end of the handiwork of hackers, emphasising the alienation many people feel both from high technology and from those fluent in its mysterious workings. Far from opening new avenues and opportunities, for the less technologically affluent, digital technologies appear to close as many doors as they open.

William Gibson acknowledges that his dark vision of Los Angeles in the Bridge trilogy was directly fed by Mike Davis' theories of urban fortification in *City of Quartz* (*VL*, 334). Indeed, the relationship between Davis' work and Gibson's is an intertwining one as on the one hand Gibson's writing was fuelled by Davis' theories, but Davis in turn has pointed out that his ideas were inspired by previous science fiction narratives, including Gibson's earlier work.[20] These intersections further illustrate Brian McHale's notion of a deepening 'feedback loop' between speculative fiction and cultural theory,

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[20] Mike Davis, *City of Quartz: Excavating the Future in Los Angeles*, London and New York, Verso, 1990, p. 223.

with each enriching and expanding the other.[21] Thus, in the Bridge novels, Gibson has built on Davis' insight that technology is only one element of a corporate and governmentally driven design exacerbating the division between the surveyors and the surveyed:

> In cities like Los Angeles, on the bad edge of Postmodernity, one observes an unprecedented tendency to merge urban design, architecture and the police apparatus into a single, comprehensive security effort.[22]

Moreover, this divide between the technologically watched and the watchers serves to link the digital divide and an increasingly visible class system with unprecedented demarcation as the boundaries are systematically secured, locking every citizen in their designated place. As Sammy Sal, a bicycle courier from the 'other' side of the class divide points out, in the world of the Bridge trilogy, 'There's only but two kinds of people. People can afford [expensive] hotels … they're one kind We're the other. Used to be, like, a middle class, people in between. But not anymore' (*VL*, 138). Davis' theory can be clearly seen underpinning the cityscapes of *Virtual Light*, where an excessively wealthy lawyer named Karen Mendelsohn makes her home in 'Century City II', a huge interconnected and exclusive series of skyscrapers including 'a tennis club, bars, and restaurants, and a mall you had to pay to join before you could shop there' (*VL*, 28-9). Moreover, not only are most urban places disappearing behind security screens, but those few remaining public realms are becoming excessively policed and surveyed to the

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[21] Brian McHale, 'POSTcyberMODERNpunkISM' in *Storming the Reality Studio: A Casebook of Cyberpunk and Postmodern Fiction*, Larry McCaffrey (ed.), London, Duke University Press, 1991, p. 320.
[22] Davis, *City of Quartz*, p. 224.

extent that Davis argues, the 'universal and ineluctable consequence of this crusade to secure the city is the destruction of accessible public space.'[23]

Due to what Davis calls the 'security driven logic of urban enclavization', even moderately wealthy suburbs in Los Angeles are highly militarised with private police forces supplementing the already substantial Los Angeles Police Department.[24] As Davis notes:

> The carefully manicured lawns of Los Angeles's Westside sprout forests of ominous little signs warning: 'Armed Response!' Even richer neighbourhoods in the canyons and hillsides isolate themselves behind walls guarded by gun-toting private police and state-of-the-art electronic surveillance.[25]

In the Bridge novels Berry Rydell, who is rich in neither the digital nor material sense, discovers that the easiest place to find employment is, ironically, within the booming contract security industry, firstly for the security company IntenSecure (*VL*, 7-10), and later providing security for the Lucky Dragon convenience store (*ATP*, 7). Davis laments that in contemporary Los Angeles the private security sector is expanding beyond the means to fully train the guards employed,[26] a concern echoed in Gibson's imagined Southern California (SoCal), where in comparison to rentacops, 'SoCal had stricter regulations for who could or couldn't become a hairdresser' (*VL*, 9). Paradoxically, the only employment option open to Rydell and those in similar predicaments is to become part of the very apparatuses of surveillance and security which have been so effective in eradicating public space and widening the digital and

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[23] Davis, *City of Quartz*, p. 226.
[24] Davis, *City of Quartz*, p. 244.
[25] Davis, *City of Quartz*, p. 223.
[26] Davis, *City of Quartz*, p. 250.

class divide. Moreover, human security officers are but one element in the ever-expanding array of security enforcement options. High levels of technologised surveillance mean that almost any movement through 'public space' entails enforced remediation where the activities of individual citizens become detailed digital profiles in the police's electronic databases. The surveillance mentality probably reached its extreme when, as Davis points out, a retiring LA police chief called for an orbiting surveillance 'giant eye'[27]; while in *Virtual Light* the idea is realised in what is nick-named, 'the Death Star, …officially it was the Southern California Geosynclinical Law Enforcement Satellite' (*VL*, 13-14).[28] The so-called Death Star and the resulting *potential* inescapability of surveillance, exemplifies Michel Foucault's idea of panoptic control, where a populace who believe they *may* be under surveillance at any time act as thought they *are* under surveillance *all the time*, thus becoming self-policing and mentally constrained.[29] Thus in the Bridge novels and the theoretical works which informed them, there are few, if any, public spaces left; electronic prying eyes and security patrols pervade every corner of Gibson's imagined world, a vision readily extrapolated from the California of the late twentieth and early twenty-first century.

For cultural theorist Michel de Certeau, even the most fortified places have cracks in their defences which allow moments of resistant spatial activity. de Certeau differentiates between the strategic creation and enforcement of *place*, and the

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[27] Davis, *City of Quartz*, p. 223.
[28] No doubt the 'Death Star' is also a reference to 1980s US President Ronald Reagan's infamous laser defence shield project which was universally nicknamed the *Star Wars* project.
[29] See Michel Foucault, *Discipline and Punish*, 1975; Harmondsworth, Penguin, 1979.

temporary tactical activities that characterise *space*. Places are official, powerful, top-down arrangements which seek to present themselves as permanent and ahistorical, eliding their own creation through strategic reinforcement. As de Certeau argues:

> I call a *strategy* the calculation (or manipulation) of power relationships that becomes possible as soon as a subject with will and power (a business, an army, a city, a scientific institution) can be isolated. It postulates a *place* that can be delimited as its *own* and serve as a base from which relations with an *exteriority* composed of targets or threats (customers or competitors, enemies, the country surrounding the city, objectives and objects of research, etc.) can be managed. As in management, every "strategic" rationalization seeks first of all to distinguish its "own" place, that is, the place of its own power and will, from an "environment."[30]

Thus the strategic development and reinforcement of place reifies the existing mechanisms of power, locking institutions all the more into an 'us' and 'them' mentality. In the Bridge novels the operations of place are even more evident, with government, police, commercial and military interests all operating together, almost as one, to secure their position while deploying technologies of control and surveillance against the exteriorised citizens who are strategically positioned as threats (a trend also visible in the overwhelming dominance of a security-driven logic across the entire political landscape of the post-September 11th Western world).

In direct contrast to the rigidity of place, de Certeau argues that individual subjects going about their everyday lives will often find tactics of resistance which facilitate the temporary creation of *space* wherein the logistics of place can be escaped or, at least, momentarily circumvented. For de Certeau, then:

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[30] de Certeau, *Practice of Everyday Life*, pp. 35-6. (Italics in original.)

> a *tactic* is a calculated action determined by the absence of a proper locus. … Thus it must play on and with a terrain imposed on it and organised by the law of a foreign power. It does not have the means to *keep to itself*, at a distance, in a position of withdrawal, foresight and self-collection … It takes advantage of "opportunities" and depends on them, being without any base where it could stockpile winnings … What it wins it cannot keep. This nowhere gives a tactic mobility, to be sure, but a mobility that must accept the chance offerings of the moment, and seize on the wing the possibilities that offer themselves at any given moment. It must vigilantly make use of the cracks that particular conjunctions open in the surveillance of the proprietary powers.[31]

Utilising tactics, resistant spaces can thus be temporarily etched onto the world of places, allowing moments of resistance and subversion in opposition to what de Certeau calls the 'law of the proper'.[32] Using the example of everyday life in the city, de Certeau contrasts the planned, policed, grid-like *place* of the built cityscape with the sometimes erratic, unpredictable and certainly subject-specific *spaces* inhabited by individual citizens as they forge their unique pathways through the city, concluding that in 'short, *space is a practiced place*. Thus the street geometrically defined by urban planning is transformed into a space by walkers.'[33] However, turning to the world of the Bridge novels, where are the spaces of resistance when security and technologised surveillance reign, fortifying 'proper' places?

In William Gibson's earlier cyberpunk novels, even when material places appeared completely rigid and impenetrable, the rebellious hackers always managed to find alternative spaces through the use of technology. However, while the cyberpunks found their own tactical pathways through cyberspace, in the Bridge trilogy, as noted above,

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[31] de Certeau, *Practice of Everyday Life*, pp. 36-7. (Italics in original.)
[32] de Certeau, *Practice of Everyday Life*, p. 117.
[33] de Certeau, *Practice of Everyday Life*, p. 117. (Italics in original.)

the protagonists—Rydell and Sublett—are manipulated and exploited by hackers in the form of the Republic of Desire at the very outset of *Virtual Light*. Following from this ostensible shift in the characterisation of technology and its resistant uses, the remainder of this first section will focus on Rydell and Sublett and their engagement with technology and the media. In doing so, I explore Gibson's rendering of technology and media, and will consider whether they have been subsumed into the strategic operations of place, or whether there are still technologically mediated tactics of spatial resistance to be found.

Ostensibly, Sublett is the character whose difficult social and economic position on the wrong side of the class and digital divides appears influenced to the largest extent by the most popular media technology, television. During the first of the Bridge novels, readers discover that Sublett is 'a refugee from some weird trailer-camp video-sect' in which they follow an entire religion built around the watching of television, wherein 'these people figured video was the Lord's preferred means of communicating, the screen itself a kind of perpetually burning bush' (*VL*, 8). The quantity of exposure appears to be the main determinant for catching a glimpse of God on the flickering screen, so unsurprisingly 'it was evident that Sublett had absorbed more television than anyone Rydell had ever met, mostly old movies on channels that never ran anything but' (*VL*, 9).

While television may have replaced religion as the opiate of the masses in the twentieth century, Gibson ironically mixes opiates old and new, fashioning a television-worshiping cult whose *modus operandi* speaks of a long history of addiction and

manipulation. On a number of levels, the video cult is an exaggeration of the commonly perceived stereotype of the passive television viewing 'couch potato', iconically represented by the character Homer in the animated series *The Simpsons*, who does indeed treat the television, metaphorically at least, as 'a kind of perpetually burning bush.'[34] Although Sublett has left the television cult, his vision of the world seems to remain strongly mediated by televisual influences; when he and Rydell are responding to an emergency call involving hostages being taken, he carefully narrates 'the helps all dead … an' they've got the three kids in the nursery', but to Rydell it 'sounded like he was talking about something mildly baffling he was seeing on television' (*VL*, 33). For Sublett, then, his life appears to be so completely dominated by the television screen that his reactions to the 'real' world and to the televisual world have become almost identical. In the case of television, far from offering tactics of resistance, Sublett's experience of the world appears firmly locked in place by a strategically constraining media technology.

Scott Bukatman has argued that the dominating influence of media technologies, and television in particular, have led to a disruption or re-orientation of existing modes of human subjectivity, leading to a form of 'terminal identity.' For Bukatman:

> The pervasive domination by, and *addiction to*, the image might be regarded as the primary symptom of terminal identity. The "image addict" is a metaphor which exists in and through the media, subject to forces which might at first seem to be controlled by the instrumental forces of government and/or big business, but that

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[34] See for example, Jim Reardown (dir.),'Treehouse of Horror V', *The Simpsons*, Fox Broadcasting, original US airdate 30 October 1994, in which an enraged Homer is pacified by the screen as he exclaims, 'Television! Teacher, mother, secret lover!'

> ultimately seems to signify the passage into a new reality. The spectacular world of television dominates and defines existence, becoming more "real" (more familiar, more authoritative, more satisfying) than physical reality itself.[35]

Bukatman argues that 'terminal identity' clearly marks a shift in subjectivity, with positive and negative aspects. While its positive attributes will be returned to in later sections of this chapter, for now it is immediately apparent that the idea of the 'image addict' applies in an overtly negative sense to Sublett. His perceptions of material and simulated worlds have almost completely imploded into one another, raising the important question of how much the Subletts of the world can distance themselves from television's influence, or whether they are, as Bukatman suggests, pawns for media producers to manipulate? Ironically, the first signs that Sublett may be able to critically distance himself from some of the media's messages appear when he is forced to return to the television cult in order to visit his ailing mother. While caring for her, Sublett shows his mother 'this Cronenberg film … this *Videodrome,*' which leads Reverend Fallon, the cult's leader, to declare Sublett an 'apostate', because Fallon believes that all of Cronenberg's films 'are clearly of the Devil' (*VL*, 279). In *Terminal Identity*, Scott Bukatman argues that *Videodrome* offers a powerful critique of a society that creates 'image addicts'[36]; for a television worshipping cult, the movie presents the paradox of something on the television warning viewers that television itself can be harmful and addictive. For Sublett, who had already fled the cult once, images of resistance conjured by *Videodrome* are enough to reignite a perspective at odds with a passive acceptance of

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[35] Scott Bukatman, *Terminal Identity: The Virtual Subject in Postmodern Science Fiction*, Durham and London, Duke University Press, 1993, p. 26. (Italics in original.)
[36] Bukatman, *Terminal Identity*, p. 86.

media messages, and he leaves the cult with Rydell, talking rapidly about 'these movies he liked, and someone called Cronenberg' (*VL*, 311-312). Thus, even in the 'trailer-sect', inhabited by those who would most readily be burdened with the label 'data trash', there are brief moments where spaces of resistance emerge, albeit offering voices of dissent which are incompatible with remaining within the media-dominated religion. However, while Sublett and the television cult are clearly the most caricatured image addicts, they are far from alone in their media-derived affliction.

Berry Rydell, one of the two accidental heroes at the centre of *Virtual Light*, is just as much an image addict as his partner Sublett, but in a more subtle way. Throughout the Bridge novels, Rydell frequently laments that all he ever wanted to do was be a good police officer. However, when Rydell's girlfriend asked him why he was so obsessed with being a cop, he pondered:

> The truth was, it probably had a lot to do with how he and his father had always watched [the reality television show] *Cops in Trouble* together, because that show seriously did teach you respect. You got to see what kind of problems the police were flat up against. Not just tooled-up slimeballs high on shit, either, but the slimeballs' lawyers and the damn courts and everything. But if he told her it was because of a TV show, he knew she'd just laugh at that, too. (*VL*, 188)

Rydell's image addiction is more complicated than Sublett's, because, similar to other types of addiction, Rydell both accepts the demands of the addiction – the desire to become a cop – and outwardly denies that the addiction is his motivation. Rydell did fulfil his desire and join the Knoxville police force, but his career was extremely short-lived, lasting less than two months, at which point he was forced to shoot a drug-crazed machinist named Kenneth Turvey who was threatening to execute his girlfriend's children. In the aftermath, Rydell found himself facing a lawsuit from Turvey's

girlfriend and, just as the television had promised, 'Rydell, having become a cop in trouble, was glad to find that *Cops in Trouble* was right there for him' (*VL*, 19). Initially, Rydell found that being involved in an episode of *Cops in Trouble* brought real benefits and joy to his life: they flew him business-class to Los Angeles, gave him an all expenses-paid credit card, provided him with a luxurious hotel suite and promised to make him famous. Unfortunately for Rydell, *Cops in Trouble*, like any television production, was always after the highest possible rating stories at any given time. Thus, when 'the first thirty-five Pooky Bear victims' were discovered, Rydell found his one chance to be a cop in televised trouble evaporated before him as the producers rapidly shifted to chasing the far more spectacular mass murder story and the cops who had been involved in breaking the case. In that instant, Rydell found himself unemployed and out of luck, a situation which rapidly led him to the world of private security enforcement (*VL*, 29).

Even after Rydell was exposed to the realities of *Cops in Trouble's* inner workings, his image addiction stemming from the show still permeated his perceptions of the material world. When working another security job, for example, Rydell had dealings with a Orlovsky, a cop from a Russian background, but Rydell's expectation of how a police officer should behave remain directly informed by images from *Cops in Trouble*. When Orlovsky and his partner track down the girl they have been chasing, 'It seemed to Rydell like the Russian just might be about to haul her out and shoot her. Sure looked like it, but what kind of cop would do that?' (*VL*, 197-8). Despite obvious signs of corruption, Rydell's idyllic image of the police is so conditioned by his television

watching that he is unable to immediately comprehend police corruption. Rydell's explanation for Orlovsky's behaviour is even more telling:

> they reflected what a lot of people more or less unconsciously expected cops to be and do, … Like what they called the Father Mulcahy Syndrome, in barricaded hostage situations. Where somebody took a hostage and the cops tried to decide what to do. And they'd all seen this movie about Father Mulcahy once, so'd they'd say, yeah, I got it, I'll get a priest, I'll get the guy's parents, I'll lay down my gun and I'll go in there and talk him out. And he'd go in there and get his ass drilled out real good. Because he forgot, and let himself think a movie was how you really did it. And it could work the other way, too, so you gradually became how you saw cops were in movies and on television. (*VL*, 203-4)

Ironically, Rydell excuses Orlovsky's actions because he thinks the Russian must have absorbed too much television. Gibson highlights how pronounced Rydell's fixation with *Cops in Trouble* is by showing his awareness of the conditioning power of television via the description of 'Father Mulcahy Syndrome', but also showing that Rydell is completely unaware that the very mechanisms of that syndrome accurately describe his own condition. Even after the producers of *Cops in Trouble* threw Rydell aside for a better story, he is still addicted to their reality TV version of how life 'really is'. Unlike Sublett, who initially appears to be an incurable image addict, but shows signs of resistance, Rydell appears to comprehend the power of television, but is actually less capable of seeing his own image addiction.

At the conclusion of *Virtual Light*, Rydell and his newfound girlfriend Chevette once again find themselves in the sort of spectacular predicament that attracts the producers of *Cops in Trouble*. As the novel ends, the implication is that everything is going to work out well for Chevette and Rydell, and that Rydell would finally escape any trouble they had encountered with the aid of their ratings-hungry benefactors. However, when Rydell re-appears in the later novel *All Tomorrow's Parties*, readers discover that, once

again, Rydell's reality-TV-fuelled dreams gave fallen through. Ironically for Rydell, who has always pretty much believed what *Cops in Trouble* has to say, the reason his chance remained unfulfilled a second time is that the camera lies: when 'a skinny blonde intern named Tara-May Allenby' started filming Rydell, she explained that the camera 'added an apparent twenty pounds', ruining any chance he had of appearing telegenic enough for fifteen minutes as a television hero (*ATP*, 85). After being rejected by the television series producers a second time, Chevette recalls: 'Rydell sitting on the couch in that apartment with the lights off, watching one old *Cops in Trouble* after another, looking lost, and she just hadn't been able to handle it' (*ATP*, 182). Rydell's inability to deal with a second rejection results in him losing Chevette, the only person who loved the 'real' him. The image of Rydell in the dark, watching re-runs of the show to which he was addicted, powerfully evokes Bukatman's argument regarding image addiction:

> The image addict is a helpless prisoner of the spectacular society. The spectacle is a force of pacification, exploitation, control, and containment which functions as either a supplement or simulacrum of the state.[37]

Exemplifying Bukatman's perspective, Rydell's existence is constrained by his beliefs and desires formed and informed by the purported reality constructed in *Cops in Trouble*. His belief in the police and the society they protect stems from the seductive power of the spectacle to render *itself* as the norm and thus strategically reinforce its already fortified place throughout society. Thus, in the Bridge novels, those on the wrong side of the digital and class divides are not only restrained by heightened levels of private security and electronic surveillance, but also by the media products and

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[37] Bukatman, *Terminal Identity*, p. 68.

technologies they consume and access which, in many ways, appear specifically designed to reify and champion the law of the proper. Returning to de Certeau's framework, television and mass media in the Bridge trilogy operate strategically, reinforcing existing power structures and 'proper' arrangements of place, and rarely provide viewers with tactical options to look, think or explore beyond official place. Mass media appears to specifically distance consumers and viewers from any potential spaces of resistance.

In the Bridge novels, most notably in *Virtual Light*, William Gibson initially appears to have imaginatively extrapolated a world where security, surveillance and the technologised operations of media all serve to reinforce existing 'proper' places, and simultaneously widen the resulting digital and class divides. For the rentacop partners Rydell and Sublett, their lives seem rigidly constrained on at least three levels: firstly, they are part of a highly security-conscious society and under constant scrutiny from digital surveillance; secondly, as that society has tried to set in stone existing structures and places, the only role the two can find is as part of the human machinery of security; and thirdly, even the media which might have been thought to provide an escape mechanism, actually reinforce the conservative, strategically maintained, status quo, providing few if any spaces of resistance. In parodying his earlier Sprawl trilogy and ironically re-casting both the signifiers of cyberpunk and the role of technology, Gibson shifts his focus to those individuals who cannot simply escape via a digital pathway into cyberspace. In building on Mike Davis' theories of urban planning and control, Gibson renders a cityscape where almost omnipresent security and surveillance are both the result of, and perpetuate, the privatisation of public space and thus the fortification of

'proper' place. Moreover, those characters on the wrong side of the digital divide are afflicted by Scott Bukatman's notion of image addiction, where their lives are constrained and seemingly pacified by the society of the spectacle in which the televisual and the real blur together, reinforcing an ideal culture far removed from the world outside the window.

In reading the world of the Bridge novels through the tactical framework developed in Michel de Certeau's *The Practice of Everyday Life*, at first it may appear that the spaces of resistance have all disappeared in the face of the fortification of place. However, even Sublett and the television worshipping cult hint at remaining tactical options; Sublett's interest in David Cronenberg's films points to tiny spaces of resistance existing even within the seemingly closed monoculture. In *Virtual Light*, when Rydell first arrives in Los Angeles, from the window of the car he is travelling in with *Cops in Trouble* lawyer Karen Mendelsohn, he sees the homeless, the poor, the destitute, those on the wrong side of the class and digital divides. When Mendelsohn looks outside encountering the same view she quips to Rydell in a deadpan tone, 'Welcome to Los Angeles, … Be glad you aren't taking the subway' (*VL*, 25). While Mendelsohn's callous indifference to the plight of other human beings may appear representative of the upper echelons of capitalist Western culture, her reaction also leads to the conclusion that, if these people who have been cast aside as data trash have survived at all, then there must be some spaces of resistance open for them. It is to those very spaces that the next section will turn.

Resistance is Spatial

> The Walled City's whereabouts, the conceptual mechanisms by which its citizens have opted to secede from the human datascape at large are the place's central and most closely held secret. The Walled City is a universe unto itself, a subversive rumour, the stuff of legend.[38]
>
> - William Gibson, *All Tomorrow's Parties*

While this chapter has thus far focused primarily on the way 'proper' official structures and systems have been reinforced by mass media and both information and security technologies, William Gibson's Bridge trilogy also highlights the cracks in these seemingly monolithic and rigid places, revealing divergent spaces, sometimes radically so, where modes of resistance may, for a time, flourish. Building upon Michel de Certeau's insights, and following cultural critic and theorist Fredric Jameson, these new spaces can be considered responses to a 'crisis of space' on at least two levels: firstly, as a crisis in purely physical terms, where public spaces have been all but eradicated leaving those people who, for one reason or another, do not 'fit in' with nowhere to go; and secondly, as a crisis in more conceptual terms where, as Jameson has argued, 'our daily life, our psychic experience, our cultural languages, are … dominated by categories of space rather than by categories of time,'[39] and where the baggage of modernist linear time is lost or, at least, challenged, replaced by the perpetual present of spatiality and simulacra.

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[38] William Gibson, *All Tomorrow's Parties*, New York, Puntam, 1999, p. 194. Hereafter referred to in the body of the essay as '*ATP*'.
[39] Fredric Jameson, *Postmodernism or, The Cultural Logic of Late Capitalism*, London, Verso, 1991, p. 16.

The first of the two new spaces imagined by Gibson, referred to simply as 'the bridge', is an organic community of San Francisco's outcast and marginalised citizens who have turned the Bay Bridge—damaged by an earthquake, and left unused—into an autonomous refuge outside the normal mechanisms and laws of the surrounding city. Hundreds, possibly thousands of people have constructed eclectic dwellings and impromptu shops and markets out of every imaginable building material available. According to residents, the bridge has 'no agenda, … no underlying structure', only an alliance of outcasts, a functional but unplanned community of people who have created their own habitat, their own space(s) (*VL*, 129). While the bridge is a *physical* manifestation of new spaces of resistance, Gibson's other imagined space, the Walled City, is the complete opposite. In the Bridge trilogy the internet has become as highly regulated and policed as the urban physical spaces. In response, the citizens of the Walled City found a way to 'secede from the human datascape', to create a virtual city which, as Masahiko, one of the self-styled 'denizens' of Walled City, cryptically puts it, is 'of the Net, but not on it.'[40] Like the bridge, the Walled City has 'no laws … just agreements,' and houses an eclectic population who have founded a new space outside of, and resistant to, the dominant digital culture (*Id*, 209).

The descriptions and terms used to describe spaces in the Bridge trilogy are already imbued with an analytical edge through Gibson's use of outside witnesses to frame these new spatial arenas. The first glimpse of the bridge is through the eyes of Yamazaki, a

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[40] William Gibson, *Idoru*, 1996; London, Penguin, 1997, p. 209. (Hereafter referred to in the body of the essay as '*Id*'.)

visiting Japanese academic who humbly describes himself as 'a student of existential sociology' (*Id*, 6). Yamazaki's initial description of the bridge is extremely telling:

> The integrity of its span was rigorous as the modern program itself, yet around this had grown another reality, intent upon its own agenda. This had occurred piecemeal, to no set plan, employing every imaginable technique and material. The result was something amorphous, startlingly organic. At night, illuminated by Christmas bulbs, by recycled neon, by torchlight, it possessed a queer medieval energy. (*VL*, 66)

The bridge is thus a 'space of bricoleurs', where bits and pieces of material and meaning, which by themselves achieve little, are brought together by the bridge dwellers to help form a new space which is not just a refuge, but is also filled with new possibilities.[41] These few lines from *Virtual Light* also resonate strongly with recent arguments regarding the postmodern cityscape. One such argument can be found in David Harvey's work. He contends that the great metropolitan cities of the Western world, complete with 'the machines, the new transport … systems, skyscrapers, bridges, and engineering wonders of all kinds,' were amongst the most powerful centres, and signifiers, of the modernist project.[42] By contrast, however, the postmodern cityscape has jettisoned these icons and ideals of progress in favour of '[f]iction, fragmentation, collage, and eclecticism, all suffused with a sense of ephemerality and chaos,' in terms of imagination, design, and everyday life.[43] While the major cities imagined in the Bridge trilogy have characteristics of both modern and postmodern cityscapes, the

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[41] James Kneale and Rob Kitchin, "Lost in Space", *Lost in Space: Geographies of Science Fiction*, Eds. James Kneale and Rob Kitchin, London and New York, Continuum, 2002, p. 1. Bricolage as both a physical and psychological trend on the bridge is also explored by Ross Farnell who coins the descriptive term 'archi*text*ure' in his "Posthuman Topologies", 1998.
[42] David Harvey, *The Postmodern Condition: An Inquiry into the Origins of Cultural Change* (Cambridge and Oxford: Blackwell, 1990), p. 27.
[43] *Ibid*., p. 98.

bridge itself iconically embodies the latter. Ross Farnell juxtaposes the bridge with the oppressive anti-spatial mechanisms described in Davis' *City of Quartz* which also informed Gibson's descriptions of near-future Los Angeles, concluding that the bridge 'is the *infrastructural alternative* to Davis's descriptions of architecture-as-repression'.[44] It would be hard to find a better representation of this shift from a modernist to postmodern cityscape than the transformation of the Bay Bridge, once a central transportation artery of a modern metropolis, into an eclectic, 'piecemeal' community housing an alliance of difference and otherness. Thus, while some cityscapes, such as the Los Angeles described in *Virtual Light*, are becoming more highly policed and surveyed with a concurrent eradication of public spaces, the inevitable outcome or by-product is the almost 'organic' creation of new spaces, such as the bridge. Moreover, the increasing number of eclectic urban refugees who populate the bridge may form only an ephemeral and chaotic alliance of difference, but while working together they have created, and maintain, a space of resistance with its 'own agenda', an agenda at odds with the monoculture of the surrounding metropolis.

For de Certeau, tactical spaces of resistance are linked to the ongoing flux of time and the multiplicity of histories.[45] Part of the establishment of proper places involves casting them as either ahistorical or, at least, as the end point of modernism's ideal of the Progress of History (with purposeful capital letters, signifying the one 'proper' History). Spaces of resistance, by contrast, make tactical use of changes and opportunities that

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[44] Farnell, 'Posthuman Topologies', p. 465. Italics added.
[45] See de Certeau, *Practice of Everyday Life*, pp. 38-9.

time presents, including the ability to construct *histories*, which do not rely on a single 'proper' narrative. Exemplifying this spatial alliance with multiplicity, one of the bridge's key differences from the surrounding cityscape is its departure from the modernist history of San Francisco. On the bridge, many histories and many stories co-exist. One of the bridge's histories is told to Yamazaki by Skinner, one of the few remaining original inhabitants who was part of the crowd that 'took' the bridge. He recalls that there were 'no signals, no leader, no architect', but 'people just *came*' one night, climbing the fences surrounding the then defunct bridge and running onto to it from either end, clinging to the towers. Eventually, the officials of the surrounding city decided, rather than risk the bad publicity of emptying the bridge by force, to allow the collection of society's most unwanted to set up a new home (*VL*, 98-102). Skinner's history thus marks the bridge as an almost mythical space of resistance, where an alliance of difference prevailed against the surrounding authorities. Yamazaki also noted that 'Skinner's mind was remarkably like the bridge', and while Skinner's version of the bridge's history may appear representative of the whole, Skinner self-consciously realised that 'history … was turning into plastic', and that every history 'was an approximation, somebody's idea of how it might have looked,' rather than a singular definitive narrative of 'how it really happened' (*VL*, 68; 273).

The bridge, therefore, also housed the histories that Fontaine perceived. Fontaine, who ran a small shop and maintained many of the bridge's electrical systems, had a very different take on history:

> Everything, to Fontaine, had a story. Each object, each fragment comprising the built world. A chorus of voices, the past alive in everything, that sea upon which the present tossed and rode. (*ATP*, 158-9).

Fontaine saw the histories implicit in every object; the histories of fragments and commodities rather than people and places. Both Skinner and Fontaine's histories share certain characteristics: both reflect Elizabeth Mahoney's argument that 'future cities [will] foreground space over … time,'[46] in that their organising principle is their spatial position on the bridge rather than where they had come *from* – their past. Moreover, both depend on randomness and chaos rather than linear causality (people 'just *came*' to take the bridge, and Fontaine's objects and fragments all travel various paths to end up on the bridge); and both histories are entirely contingent (Skinner recognises that when he dies, his version of bridge history will die with him, and Fontaine realises that the 'chorus of voices' that he perceives in material objects will alter as new fragments and objects come onto, or leave, the bridge). Moreover, many of the bridge's inhabitants choose to completely privilege the perpetual present of their spatiality over any historical baggage they once carried. For example, when an outsider enquires of Boomzilla if he has seen someone they call a 'lost child', he lies and says he has never seen the girl because, 'A lost child himself, he has every intention of staying that way' (*ATP*, 83). In the space of the bridge, the inhabitants all implicitly recognise the choice of one another, if they wish, to escape their former histories and, if need be, the alliance of others works together to allow each of the bridge folk to exist in a community which is concerned only with the spatial dynamics of their eclectic, but functionally communal, present. In de Certeau's terms, then, the space of the bridge is replete with tactical stories which allow the bridge dwellers to resist the official narrative of both the places

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[46] Elizabeth Mahoney, '"The People in Parentheses" Space Under Pressure in the Postmodern City' in *The Cinematic City*, ed. David Clarke, London and New York, Routledge, 1997, p. 168.

they have fled and the stories those places had previously attempted to inscribe on the bridge folk.

Through Tessa, an Australian new media student and documentary maker who, like Yamazaki, witnesses rather than participates in the new spaces of resistance, Gibson reveals the ideal terminology to describe the bridge:

> The documentary Tessa wanted to make was about interstitial communities, and Tessa said Chevette had lived in one, because Chevette had lived on the bridge. Interstitial meant in between things, and Chevette figured that that made a kind of sense, anyway. (*ATP*, 33)

The bridge is an interstitial space on a number of levels: literally, the bridge is between the two landmasses of San Francisco; metaphorically, the bridge and its inhabitants exist between the gaps in the ostensible monoculture; and paradigmatically, the bridge exists between the end of modernism and whatever comes next (such as the Walled City, discussed below). Similarly, the many tactics employed by those living on the bridge take place in the cracks existing in-between the official structures of the surrounding city. Indeed, the sense of being 'between things' resonates throughout all three books, thus my describing them as Gibson's Bridge trilogy. Ironically, however, as soon as the ideal term to describe the bridge is found, it starts to lose its interstitiality.

When Tessa arrives on the bridge she is accompanied by the former bridge dweller Chevette who is returning after an absence of over a year. When they walk out onto the bridge the first thing they see is a 'Lucky Dragon', 'a modular convenience store, chunked down front and centre across the entrance to the bridge's two levels' (*ATP*, 66).

Chevette is horrified to see a commercial chain-store on the bridge[47] and while Tessa brushes it off, explaining the bridge has been there 'long enough to become the city's number-one postcard,' Chevette senses that the bridge has lost something important. Tessa comments that she has to hurry in order 'to document the life before it's theme-parked,' but Chevette realises that it is already too late (*ATP*, 67). Later, Chevette explains to Tessa:

> Used to be, everyone who did anything here, who had a business going, they lived here. 'Cause you have to. Have to be in possession. No rent or anything. Now, though, you get businesses that are run like businesses, you know? That Bad Sector [a shop] we were in. Somebody owns all that stock, they built that storefront, and I bet they pay that sumo boy to sleep in back, hold it down for them. (*ATP*, 138)

Moreover, when she is reunited with Fontaine, Chevette asks him why he thinks the bridge is changing, and he replies: 'It just is, … [t]hings have a time, then they change' (*ATP*, 160). While the bridge was initially an interstitial space, it has slowly become popular and begun to re-integrate into the surrounding city, reflecting de Certeau's point that tactics are temporary, and thus tactical spaces must be as well. Just as the bridge became interstitial by no set plan, it could not then become permanently ephemeral (an oxymoron, after all), and instead the bridge community need either become more integrated into the San Francisco cityscape, or search out new spaces. Chevette, a former bridge resident, understands this, while Tessa, never having been 'in between', cannot:

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[47] There is, however, 'the irony of a Singaporean multinational colonizing a First World space, implying that globalisation does not necessarily flow one way', a point made by Kneale and Kitchin. "Lost in Space", p. 2.

> It is a world within the world, and, if there be such places between the things of the world, places built in the gaps, then surely there are things there, and places between them, and things in those places too. And Tessa doesn't know this, and it is not Chevette's place to tell her. (*ATP*, 80-81)

Chevette recognises that while some may disappear, there will always be new, emerging spaces of resistance, suffused with interstitiality, in between things. The Walled City is one of them.

Just as the bridge exists as part of the geographical city of San Francisco but is conceptually and spatially at odds with it, the Walled City is part of the broader digital world but exists outside the rules and regulations of the normative internet. As Masahiko explains, the 'Walled City is of the net, but not on it. There are no laws here, only agreements,' (*Id,* 209). The Walled City, unlike the internet, is not centrally governed but, like the bridge, exists due to an alliance between the various eclectic citizens who perform 'distributed processing', building and maintaining the Walled City on their own terms, not within the frameworks enforced by governments and global corporations (*Id,* 209). The bifurcation of the Walled City and the outside digital world can be mapped through Mark Nunes' conceptualisation of 'virtual topographies' – geographical and conceptual explanations of information and communication systems. Nunes argues that there is a digital dichotomy between the competing paradigms of *smooth* and *striated* virtual space: the former, represented in the phrase "Surf the 'Net", refers to a more fluid, unlimited and malleable concept (recognisably postmodern); the latter, represented by the phrase "Cruise the Information Superhighway", refers to a

concrete, linear, and 'point-oriented' virtual topography (which is more recognisably modernist).[48] Nunes' informatic dichotomy aligns closely with de Certeau's division between place and space: the striated, point-oriented official information superhighway aptly encompasses the notion of place within the digital realm; while, by contrast, the smooth, fluid and changing 'net, which presumably exists within the gaps of the striated model, corresponds closely with the idea of informatic spaces of resistance. Thus in the Bridge trilogy, the global information communication system is more like the concrete, linear model, complete with stringent regulations and restrictions. The 'denizens' of the Walled City, however, like the bridge folk, found the increasing restrictions on their (virtual) space impossible to live within, so they managed to break away from the broader official datascape. They constructed what they call 'another country', but not 'in any obsolete sense of the merely geopolitical', but rather a completely 'autonomous reality,' which is functionally and spatially separate from the highly restricted global system (*ATP*, 126). Their new country retains the fluidity and malleability of Nunes' smooth topography, as the internet had before it became highly regulated, and thus provides new tactical spaces for projects and existence *per se* outside of and resistant to the proper striated digital system of the dominant culture.

The potential spaces of resistance opened up by digital technologies have also been provocatively theorised by cultural critic Hakim Bey. Writing in the late 1980s, and

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[48] Mark Nunes, 'Virtual Topographies: Smooth and Striated Cyberspace' in *Cyberspace Textuality: Computer Technology and Literary Theory*, ed. Marie-Laure Ryan, Indiana, University of Indiana Press, 1999, p. 62.

extrapolating from subversive forms such as 'the marginal zine network, the BBS [Bulletin Board System] networks, pirated software, hacking, [and] phone-phreaking'[49] Bey argued that new technologies could facilitate what he labelled 'temporary autonomous zones' or TAZs. Although not explicitly drawing on de Certeau, Bey's TAZ is uncannily similar to a digital incarnation of spaces of resistance. For example, he argues:

> The TAZ is like an uprising which does not engage directly with the State, a guerilla operation which liberates an area (of land, of time, of imagination) and then dissolves itself to re-form elsewhere/elsewhen, *before* the State can crush it.[50]

Bey's TAZs not only resonate with de Certeau's spatial modes of tactical resistance, but also with the Walled City and its political positioning outside of the authorised internet in that for Bey, TAZs exist as part of a 'shadowy sort of *counter-Net*' which are just outside the 'proper' information superhighway.[51] Politically, the Walled City operates for all intents and purposes as one of Bey's temporary autonomous zones, providing new digital realms just outside, and existing infrastructurally within the cracks of, the official informatic networks. The resemblance between TAZs and de Certeau's ideas of spatial resistance also position the Walled City as an exemplar of digital tactical space, a notion reinforced by Bey who argues further that the 'TAZ is thus a perfect tactic for an era in which the State is omnipresent and all-powerful yet simultaneously riddled with cracks and vacancies.'[52]

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[49] Hakim Bey, *T. A. Z.: The Temporary Autonomous Zone, Ontological Anarchy, Poetic Terrorism*, Brooklyn, New York, Autonomedia, 1991, p. 107.
[50] Bey, *T. A. Z.*, p. 99.
[51] Bey, *T.A.Z.*, p. 106.
[52] Bey. *T. A. Z.*, p. 99.

The Walled City not only provides an alternative political sphere, but allows the residents to develop more postmodern spatial relations to, and within, their constructed virtual environment. When Chia McKenzie first visits the Walled City, she immediately becomes imbricated (and almost overwhelmed) by their different conceptualisation of time and space:

> They were inside now, smoothly accelerating, and the squirming density of the thing was continual visual impact, an optical drumming. “Tai Chang Street.” Walls scrawled and crawling with scrolling messages, spectral doorways passing like cards in a shuffled deck. And they were not alone: others there, ghost-figures whipping past, and everywhere the sense of eyes. Fractal filth, bit-rot, the corridor of their passage tented with crazy swoops of faintly flickering lines of some kind. "Alms House Backstreet.” A sharp turn. Another. Then they were ascending a maze of twisting stairwells, still accelerating, and Chia took a deep breath ... (*Id*, 182)

Here, Chia is guided through the Walled City not in linear time, but via a temporal framework completely defined by Masahiko (her guide) and Chia’s movement through the spaces of the Walled City. Masahiko, a Walled City resident, can move through the city as fast as he chooses, navigating the digital cityscape at accelerated speeds, creating an ‘optical drumming’ for Chia who is stunned by the depth and intensity of the ‘continual visual impact’ of simulacra. The shift in temporal and spatial signification in the Walled City echoes Vivian Sobchack’s arguments about similar shifts of meaning in science fiction films. She argues:

> The inflated value of space and surface has led to a deflation of temporal value, to a collapse of those temporal relationships that formulated time as a continuous and

> unifying flow – constituting the coherence of personal identity, history and narrative … [and] transformed temporal coherence into spatial co-Here-nce.[53]

In the Walled City, Sobchack's notion of spatial co-Here-nce reaches its logical extreme: in the virtual cityscape, time has become completely contingent on the subjective movement of individuals through the labyrinth of its dense digital surfaces. Significantly, time and space within the Walled City are no less real to the inhabitants, many of whom exist like Masahiko, who spends 'all his waking hours [there,] … his dreams too' (*Id*, 89). Even in contemporary society, Mark Nunes has argued, 'popular acceptance of cyberspace as a space has not needed to wait for the arrival of bodysuit-and-goggle "virtual reality"; for literally millions of users, cyberspace already "exists" as a *place*, as real as the work and play conducted "in" it.'[54] For the denizens of the Walled City, their interstitial space is not only as real as the material and digital culture of the surrounding monoculture (or the bridge), but their space in-between is also all that much more important given that their rearticulated reality privileges spatial co-Here-nce over previous (modernist) concepts of linear time.

The new spatial relations in the Walled City also mean that multiple histories can co-exist, as they did following reconceptualisations of space on the bridge. The Walled City's first history is really more 'the stuff of legend' and 'subversive rumour' than an

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[53] Vivian Sobchack, *Screening Space: The American Science Fiction Film*, New York, Ungar, 1987, p. 272.

[54] Nunes, 'Virtual Topographies', p. 61. It should be emphasised that William Gibson *never* uses the term 'cyberspace' to describe the virtual spaces in the Bridge trilogy. Gibson's choice not to do so is most likely because the digital spaces in the Bridge trilogy are quite different to the ones originally described in *Neuromancer* where the term 'cyberspace' was coined. Moreover, Gibson's use of cyberspace is implicitly linked to cyberpunk, and the Bridge trilogy is explicitly *not* cyberpunk as illustrated through Sublett's characterisation (discussed earlier in the chapter).

historical narrative (*ATP*, 194). In the myth, the Walled City began with a 'shared killfile' – a communal set of mechanisms to delete any incoming messages or data the users wanted to avoid – and then:

> Someone had the idea to turn the killfile inside out. This is not really how it happened, you understand, but this is how the story is told: that the people who founded [the Walled City] … were angry, because the net had been very free, you could do what you wanted, but then the governments and the companies, they had different ideas of what you could, what you couldn't do. So these people, they found a way to unravel something. A little place, a piece, like cloth. They made something like a killfile of everything, everything they didn't like, and they turned that inside out … (*Id*, 221).

Not concerned with the complex technical details of how it actually happened, the killfile myth emphasises the Walled City's deliberate position outside the norms of the dominant digital culture in both a technological and political sense. A second history also emphasises these themes, but in a different way.

The Walled City's second history begins with Hak Nam, an autonomous zone in Hong Kong (when it was a British colony), that had been without laws or police because of a mistake in the possession agreement with China which left the zone technically under Chinese control, but control that was never exercised since Hak Nam was surrounded by British-held Hong Kong.[55] Hak Nam, a tiny space but extremely densely populated, was an 'outlaw place', which housed 'drugs and whores and gambling. But people living, too. Factories, restaurants. A city. No laws' (*Id*, 221). The original Walled City was an archetypal interstitial space, but before the handover of Hong Kong back to Chinese

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[55] Peter Popham, "Introduction", *City of Darkness: Life in Kowloon Walled City*, Eds. Greg Girard and Ian Lambot, Hong Kong, Watermark Publications, 1993, p. 9.

administration, it was cleared and demolished.[56] As Masahiko recalls, 'thirty-three thousand people inhabited [the] original. Two-point-seven hectares. As many as fourteen stories' (*Id*, 184). The collective digital architects of the Walled City found in Hak Nam their political model, and therefore decided to make the virtual world of the Walled City an exact replica of the original: 'they found the data. The history of it. Maps. Pictures. They built it again' (*Id*, 222). Thus, the Walled City's second history emphasises how the new spatial possibilities of the digital domain can be used to keep alive a political and spatial 'world' that the material authorities sought to eradicate. These multiple histories of the Walled City also evoke Fredric Jameson's idea of the 'new spatial logic of the simulacrum'. For Jameson, the increasing dominance of space and surfaces was implicitly negative because, he argued, it replaced any sense of linear historical development, and thus political unity and progress.[57] However, the Walled City's digital regeneration of the interstitial space of Hak Nam illustrates how the 'spatial logic of the simulacrum' can be a positive force, used for political resistance against the monolithic late capitalist systems that Jameson so powerfully critiques. Building upon de Certeau, the emergent spaces of resistance facilitated by new digital possibilities also enhance the tactical potential of the informatic Walled City. Thus, the Walled City's multiple histories, precisely because of their position within a new system which emphasises spatial co-Here-nce and surfaces, map a space which is intrinsically interstitial and resistant against the dominant culture in terms of politics, identity and history.

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[56] Charles Goddard, "The Clearance," *City of Darkness*, p. 208.
[57] Jameson, *Postmodernism*, p. 18.

The real test of the effectiveness of resistant spaces, however, comes at the conclusion of *All Tomorrow's Parties*. In the final novel, Cody Harwood, the president of the Harwood Levine megacorporation and the world's richest man who 'maybe, just maybe, ran it all,' has embarked on a project that will eradicate the bridge community as well as undermine any resistance to his political and economic dominance (*ATP*, 15). Through various backchannels, the inhabitants of the Walled City become aware of Harwood's plans and in alliance with Colin Laney, a data analyst with a particular 'knack' for seeing emerging structures, set out to stop Harwood. In the last few chapters of *All Tomorrow's Parties*, Berry Rydell, Fontaine and a number of other people on the bridge form one prong of an attack on Harwood, while Colin Laney and 'virtually the entire population of the Walled City, working in a mode of simultaneity that very nearly approximates unison' form another (*ATP*, 250). Through this uncanny and eclectic alliance, Harwood's plan is halted and the bridge, although set on fire by Harwood's team, is saved, while Harwood's more cryptic plan to consolidate his material and economic power is likewise undermined. Ultimately, Gibson privileges the tactical interstitial spaces and their communities who may come from many different backgrounds but, when they work together, can be more powerful than any force the dominant culture can muster. Similarly, the Walled City's population appear completely capable of working for the collective good if need be, in this case to undermine the attempts by the dominant culture to erase the resistant potential of digitally enabled interstitial spaces.

The notion of a collective and its rearticulation within digital realms has also been productively explored by French theorist Pierre Levy. He argues that an ideal and *realisable* outcome of the possibilities enabled by computer networks is the formation of *collective intelligence* which entails intricate group problem-solving and action, but not at the expense of individuality or uniqueness. Levy argues further that:

> The technopolitical problem of democracy in cyberspace is to provide a community with the means to develop a collective voice without the need for representation. This collective voice could, for example, take the form of a complex image or dynamic space, a changing map of group practices and ideas. Each of us would be able to situate ourselves in a virtual world that the community as a whole helped to enrich and sculpt through their acts of communication. Collectivity is not necessarily synonymous with solidity and uniformity. The development of cyberspace provides us with the opportunity to experiment with collective methods of organisation and regulation that dignify multiplicity and variety.[58]

Gibson's vision of the Walled City can be easily rendered as a completely successful outcome to one such experiment with collectivity. Indeed, Levy describes the spatial characteristics containing these new dynamic collectives as forming 'intelligent cities … which should be understood as a moral and political entity rather than a physical place' whose key functions involve enhanced 'listening, expression, decision-making, evaluation, organisation, connection, and vision, all of which are interrelated.'[59] Similarly, rather than having an elaborate electoral system wherein a few speak for the many until the next election, the denizens of the Walled City operate using 'no laws … just agreements,' but agreements that are task-specific, with everyone who wishes to being involved in decision making, which in turn, when endorsed by everyone, can lead

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[58] Pierre Levy. *Collective Intelligence: Mankind's Emerging World in Cyberspace*. Trans. Robert Bononno. New York and London: Plenum Trade, 1997, p. 66.
[59] Levy, *Collective Intelligence*, p. 70.

to 'virtually the entire population of the Walled City, working in a mode of simultaneity that very nearly approximates unison,' as discussed above. While this vision may seem far-fetched, both Henry Jenkins[60] and Jane McGonigal[61], with reference to interactive audiences and collective augmented reality game players respectively, have argued that Levy's notion of collective intelligence is beginning to be realised in everyday life when information and communication technologies are used for new forms of cultural activity.[62] It is also worth emphasising that for de Certeau tactical resistance illuminates 'the extent to which intelligence is inseparable from the everyday struggles,'[63] and the very acts of distributed processing which maintain the Walled City entail around the clock struggle. Ironically, then, in the speculative vision of the Walled City which so closely matches Pierre Levy's notions of collective intelligence, *political representation* has given way to a more directly involved tactical decision-making process, but that process itself involves a new space that relies on *digital representation* and communication to work effectively.

By this stage it is apparent that William Gibson's bridge trilogy speculatively maps a new pragmatic and political configuration of emergent spatiality which is facilitated by information and communication technologies but is not exclusively digital. While this

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[60] Henry Jenkins, "Interactive Audiences?", *The New Media Book*, Ed. Dan Harries, London, British Film Institute, 2002, pp. 157-70.
[61] Jane McGonigal, "'This Is Not a Game': Immersive Aesthetics and Collective Play," *Fine Arts Forum*, 2003, pp. 110-18, http://hypertext.rmit.edu.au/dac/papers/McGonigal.pdf, accessed 3 May 2003.
[62] Although in its nascent form, the recent emergence of a communally authored free online encyclopedia such as the *Wikipedia* <http://wikipedia.org/> could also be indicative of trends toward collective intelligence.
[63] de Certeau, *Everyday Life*, p. xx.

new space shares many similarities with and characteristics of de Certeau's tactical spatial resistance, Bey's Temporary Autonomous Zones and Levy's collectively intelligent cities, I contend that Gibson's notion of space is sufficiently different to each of these to require a new and more specific label. The most appropriate term, then, is *artificial space* which has a number of specific characteristics. From de Certeau's work, artificial space is *tactical* in its opposition to and defiance of the almost monolithic surrounding conservative world which reinforces the law of the proper, the notion of unchanging place and the promotion of a singular History. Rather than succumbing to a security and surveillance driven globe, artificial space is filled with multiple histories and stories which promote and defend individuality but in a democratic form unlike those of the twentieth century. Unlike the description in *The Practice of Everyday Life* of tactics as temporary, digital technologies facilitate more lasting resistance, exemplified by the ongoing tactical existence of the Walled City. Artificial space *shares much of its ethos with Temporary Autonomous Zones* yet at the same time its denizens work hard to avoid their realms being temporary or autonomous. Or, more clearly, artificial spaces are in many ways oppositional to mainstream politics and places, but they are also pragmatic in their existence alongside and within the wider world. The Walled City 'opted to secede from the human datascape' not to then exist in a vacuum but rather to re-engage with the dominant culture on their own collective terms. Artificial space harbours and encourages Levy's *collective intelligence*, facilitating new ways of thinking, sharing and acting via the use of interactive digital tools. However, unlike Levy's utopian notion that everyone will participate and form intelligent cities, artificial space is characterised by the recognition that it will almost always be in the

minority. Lastly, artificial space is *interstitial* in that it acts as a bridge between both the material and the digital, and also modernism and whatever comes next. Indeed, the central antagonist of the trilogy, Cody Harwood, attempts to burn the bridge to the ground during the climax of *All Tomorrow's Parties* but the combined resources of the inhabitants of both the bridge and the Walled City respect their proverbs, maintaining their interstitiality and not burning their bridges.

Artificial space both utilises and rearticulates de Certeau's tactics, as well as aspects of Temporary Autonomous Zones, collective intelligence and interstitiality. As such it clearly shares the bridging ideals of artificiality outlined in the first two chapters, but does artificial space also participate in valuing and supporting embodiment as was the case with ideas of artificial intelligence and artificial life? It is that question which will be examined in the following and final section of this chapter.

Bridging Embodiment

> Communications technologies and biotechnologies are the crucial tools recrafting our bodies.[64]
>
> - Donna Haraway, 'A Cyborg Manifesto'

> As technologies grow even smaller, and finally disappear into an organism, the space of technology is troublingly like the space of the body …[65]
>
> - Michelle Kendrick, *Lost in Space*

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[64] Donna J Haraway, 'A Cyborg Manifesto: Science, Technology, and Socialist-Feminist in the Late Twentieth Century' in *Simians, Cyborgs, and Women: The Reinvention of Nature*, New York: Routledge, 1991, p. 164.

[65] Michelle Kendrick, "Space, Technology and Neal Stephenson's Science Fiction," in Kitchin and Kneale, *Lost in Space*, p. 58.

In the many, varied academic responses to William Gibson's archetypal novel *Neuromancer*, the most contested site of meaning has been Gibson's re-deployment of the human body. Feminist critic Veronica Hollinger, for example, argued that Gibson's use of cyborg characters championed the 'interface of the human and the machine, radically decentring the human body, the sacred icon of the essential self,' thereby disrupting the modernist and humanist dichotomy of human and technology, and associated dualisms of nature/culture, mind/body, and thus the gendered binarism of male/female.[66] 'Human bodies in Gibson's stories,' Hollinger argues further, 'are subjected to shaping and re-shaping, the human form destined perhaps to become one available choice among many.'[67] Conversely, Thomas Foster has argued that Gibson's bifurcation of cyberspace and the material world reifies the mind and devalues the body as surplus 'meat.' Moreover, far from disrupting the assumptions of humanism, in *Neuromancer*, although they are both cyborgs, the cyberspace cowboy (Case) is male, and the street warrior (Molly) is female, implicitly maintaining the gendered associations of masculinity with the mind, and femininity with the body.[68] As both of these (and most other) analyses of Gibson's cyberpunk novels situate cyborgs as the central signifier of embodiment, in order to explore Gibson's development of ideas relating to the body in the Bridge trilogy, the first question that needs to be asked is: 'where have all the cyborgs gone?'

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[66] Hollinger, 'Cybernetic Deconstructions', p. 33.
[67] Hollinger, 'Cybernetic Deconstructions', p. 35.
[68] Thomas Foster, 'Meat Puppets or Robopaths?: Cyberpunk and the Question of Embodiment', *Genders*, 18, 1993, p. 18.

Ostensibly it appears that there are no cyborgs in Gibson's second trilogy: certainly none of the characters have surgically implanted devices like those sported by Molly in *Neuromancer*. However, Gibson has not discarded cyborgs altogether, but rather builds upon a different concept of cyborg identity. Donna Haraway has argued in her ironic 'Manifesto for Cyborgs', that everyone in contemporary society is *already* a cyborg. Quickly qualified, Haraway does not suggest that everyone has become a 'razor girl' like Molly; nor is everyone akin to the Borg of *Star Trek*, covered in black latex and biotechnic implants. Rather, physically, all humans are cyborgs because it is impossible not to become entwined with technology as part of everyday life: immunisation, hearing-aids, telecommunications, computers and calcium-enhanced milk are all examples of technology and the human body hybridising to become cyborgs. More importantly, at a metaphorical level, the interrelation between people and technologies means that there 'is no fundamental, ontological separation in our formal knowledge of machine and organism, of technical and organic.'[69] Thus, as Haraway argues further that '[c]ommunications technologies and biotechnologies are the crucial tools recrafting our bodies', the recrafting she envisages can be on either a conceptual or a material level, or both. Utilising Haraway's concept of the cyborg, the characters in the Bridge trilogy are still fundamentally enmeshed with technology, although not necessarily on a permanently visible physical level. To explore how these cyborgs illuminate Gibson's body politics in the Bridge trilogy, three characters will be examined: Colin Laney, an

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[69] Haraway, 'A Cyborg Manifesto', p. 178.

obsessive data analyst; Zona Rosa, a member of the Lo/Rez digital fan community and close friend of Chia's from *Idoru*; and Rei Toei, the idoru, who is one of the world's most well known faces (and bodies) but has no more materiality than a 'sea of information.'

Before examining these three characters, it is worth noting that none of them hail from the bridge or the Walled City, at least initially. Rather, the journeys Colin Laney, Zona Rosa and Rei Toei undertake during Gibson's trilogy highlights some of the important pathways to and connections with artificial spaces. It proves more challenging to examine the denizens of the Walled City themselves since Gibson tends to present either their material existence or mediated existence within the informatic recreation, but rarely both. Masahiko, Chia's accidental guide in *Idoru*, is the only substantial character that readers meet both inside and out of the Walled City. Significantly, his small part of the digital realm is rendered as 'a much cleaner but no larger version of his room behind the kitchen in the restaurant' that his parents own, while his physical appearance is a 'basic scan job, maybe a year out of date: his hair was shorter. He wore the same black tunic' (*Id*, 182-3). More importantly, when questioned about the Walled City's fidelity to its material predecessor, Masahiko tells Chia that 'The Walled City is a concept of scale. Very important. Scale *is* place, yes? Thirty-three thousand people inhabited original. Two-point-seven hectares. As many as fourteen stories' (*Id*, 184). Masahiko's informatic appearance, surroundings and philosophy all posit the Walled City and artificial spaces more broadly as territories where the digital and the material are clearly linked in non-trivial ways. The malleability of the virtual, or what Gibson calls 'the infinite plasticity of the digital' (*ATP*, 117), may offer almost limitless choices in terms

of representing space, but the Walled City is politically, philosophically and personally meaningful to its inhabitants due to its connections with the material world. Nor are the Walled City's residents unaware of the limitations of informational representation. When Berry Rydell meets Klaus, who appears as 'a thin, pale man in a dark suit from no particular era, his lips pursed primly' he is warned that while only meeting Klaus and a companion in virtual reality, 'you have no idea who we are, and if we were to reappear to you at some later time, you would have no way of knowing that we were, in fact, us' (*ATP*, 125-6). Thus, extrapolating from the few denizens of the Walled City represented in the Bridge trilogy, those people living in artificial space appear to make the most of their informatic possibilities by meaningfully linking the digital and the material.

When Colin Laney first appears in *Idoru*, we learn he has a particular affinity with information structures: he has 'a peculiar knack with data-collection architectures, and a medically documented concentration-deficit that he could toggle, under certain conditions, into a state of pathological hyperfocus' (*Id*, 25). The result of his talent means that Laney can perceive 'nodal points' in the human datascape, which means he can not only locate specific information faster than almost anyone else, but also that he can comprehend the movement of data in such a way which he can see emerging structures – the ability not so much to predict the future, as to map the likely outcomes of patterns in the datascape which only he can see.[70] Laney's talents are not natural, but

[70] Gibson's explanation of 'nodal points' and Laney's predictive ability almost sounds mystical, and has gained Gibson some criticism for not basing his idea in some form of science. In response to these accusations, Gibson has explained that Laney's skills are based on his 'very, very superficial and imperfect take on chaos theory and fractal geometry' (William Gibson interviewed in Peter Daring.

rather the results of the drug '5-SB', for which he was a test subject while in a Gainesville orphanage some years earlier. A side effect of the drug was that recipients tended to become fixated not only with information but also with a single media figure, such as an actor or politician, thus 5-SB became 'one of the most illegal substances, any damn country you care to look at' (*Id*, 133). By the beginning of *All Tomorrow's Parties*, the 5-SB has 'kicked in' and Laney has become obsessed with Cody Harwood, the world's most powerful man, who is trying to control the shape of the future and is involved in a project which will change the world or, as Laney perceives it, Harwood is behind 'the mother of all nodal points' (*ATP*, 4). As Laney's obsession and his tracking of Harwood continue, Laney's sense of self no longer explicitly involves embodiment: 'Laney's progress through all the data in the world (or that data's progress through him) has long since become what he is, rather than something he merely does' (*ATP*, 163). Ostensibly, Laney appears to be gripped by what Arthur Kroker and Michael Weinstein have called 'the will to virtuality,' which is the narcissistic and nihilistic 'will to surrender oneself to technologically-mediated and externalised imaginaries,' and to completely ignore and deny the material body.[71] The 'will to virtuality' also appears starkly evident in Gibson's earlier work.

In the Bridge trilogy, Colin Laney is the character most similar to Case, the console cowboy in *Neuromancer*. Case is far more obviously gripped by the 'will to virtuality'

'Sandpapering the conscious mind with William Gibson', *Science Fiction Weekly*, Feb. 7, 2000, 146.6, accessed 11th February 2000, http://www.scifi.com/sfw/issue146/interview.html).

[71] Kroker and Weinstein, *Data Trash*, p. 41.

than Laney: for Case the only world worth knowing was 'the bodiless exultation of cyberspace'; concurrently, 'the body was meat', and when forced to live outside of cyberspace, Case 'fell into a prison of his own flesh.'[72] Moreover, Case's experience of cyberspace is both pleasurable and fulfils many of his normal bodily urges: when he finally does 'jack in' to cyberspace, it is a highly charged, almost sexual, experience, leaving 'tears of release, streaming down his face.'[73] From these passages, Thomas Foster's argument that *Neuromancer* presents a 'devaluation' of the human body appears convincing as Case not only prefers cyberspace over the material world, but actively attempts to spend all his time there, with little or no ramifications for his ignored material body.[74] However, while Laney ostensibly identifies with the datascape as strongly as Case, there is a substantial shift in the way Laney's embodiment is represented. For Laney, the 'will to virtuality' is not so much an indulgent choice, as it was for Case, but rather the result of the particularly powerful drug, 5-SB. While Case's time in cyberspace has no lasting negative effects on his material body, Laney, by contrast, is so obsessed with the datascape and tracking Harwood that he spends *all* his time online, he no longer sleeps, or eats properly, is physically ill, and lives, hiding, in a cardboard box in a Japanese subway station (*ATP*, 1-6; 79). As much as Laney might like to deny his physical body, sometimes he is unable, and then he 'is suddenly and terribly aware of his physical being, the condition of his body. His lungs failing in a cardboard carton in the concrete bowels of Shinjuku Station' (*ATP*, 178). Moreover,

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[72] Gibson, *Neuromancer*, p. 12.
[73] Gibson, *Neuromancer*, p.69.
[74] Foster, 'Meat Puppets', pp. 18-19.

while Case is free to return to a normal embodied existence at the conclusion of his adventure, Laney is not: as the alliance of which Laney is part manages to stop Harwood's plan, Laney dies, alone, in 'the dark in his fetid box', his body exhausted (*ATP*, 260).

The different ramifications of the 'will to virtuality' for Case and Laney mark a change in Gibson's representation of embodiment. In the Sprawl trilogy, the human body is (arguably) 'devalued', and can be completely forgotten without serious consequences. However, in the Bridge novels, the 'will to virtuality' is not so much a choice as the result of a debilitating addiction spurred on by drugs. Laney's addiction to the datascape is similar to Berry Rydell's 'image addiction' mentioned above, but as the datascape has far more media depth, so too are the consequences of the addiction far more serious. Indeed, the peril Laney faces in neglecting and ignoring his physical form is even recognised by those from the Walled City who, while valuing Laney as an ally, recognise that given his current situation 'for reasons of health' he may soon be lost to the world, material or digital (*ATP*, 127). Laney's resulting physical illness and eventual demise illuminate Gibson's position that the material body cannot simply be discarded or forgotten and that the 'will to virtuality', at an extreme, is all too literally a terminal impulse.

In *Idoru*, one of Chia McKenzie's closest friends is Zona Rosa, despite the fact the two girls speak different languages and have never met in the material world. Zona and Chia are members of the Lo/Rez fanclub, a collection of fans who geographically live great distances apart, but who manage to meet regularly. Their meetings take place online in

virtual reality environments, where each participant is represented by their own virtual body, or 'avatar'.[75] In Zona's material existence she claimed to be 'the leader of a knife packing *chilanga* girl gang. Not the meanest in Mexico City, maybe, but serious enough about turf and tribute' (*Id*, 12). Thus, while Chia was happy to have an avatar that looked like 'only a slightly tweaked, she felt, version of how the mirror told her she actually looked', Zona, by contrast, chose to represent herself as a 'blue Aztec death's-head burning bodiless, ghosts of her blue hands flickering like strobe-lit doves … [with] lightning zig-zags … around the crown of the neon skull' (*Id*, 11-12). Just as important, their chosen avatar software included an 'instantaneous on-line translation' routine, so each girl could understand the other, even if their languages were different (*Id*, 11). Gibson's description of virtual reality communication illuminates an online world where communication technologies not only bridge geographical and linguistic barriers, but also add a visual depth to communication that is unavailable through other media. Karen Cadora has argued the use of avatars and the development of virtual reality as 'a space which must be navigated with a body of some sort' marks a digital arena where the 'realities of the flesh' still have remediated resonance.[76] Certainly, these digital bodily images are more important in the Bridge trilogy than in the Sprawl novels, since in the cyberspace envisioned in *Neuromancer*, navigation and existence in cyberspace was through a disembodied point of view. For Zona Rosa, however, embodied existence through her avatar is even more meaningful.

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[75] The term avatar has been widely used to describe 'the audiovisual bodies that people use to communicate with each other' in virtual reality evinced, for example, in the post-cyberpunk novel by Neal Stephenson, *Snow Crash*, New York, Bantam Spectra, 1992, p. 35.
[76] Karen Cadora, 'Feminist Cyberpunk', *Science Fiction Studies*, 22, 1995, pp. 364-5.

During the climax of *Idoru*, Zona comes to Chia's defence in the digital world. In order to force the owner of another website to aid Chia's cause, Zona uses an illegal software weapon that briefly gives her control of that website. In the aftermath, the Etruscan, a denizen of the Walled City, and Rei Toei, the idoru, explain to Chia that Zona is gone:

> "But they've only shut down her website," Chia said. "She's in Mexico City, with her gang."
> "She is nowhere," the Etruscan said. (*Id*, 284)

When Zona used the software weapon, she exposed the location of her website to the pursuing authorities, forcing her to abandon it. However, as the Etruscan tells it, that was not enough:

> "They pursued her. She was forced to discard her persona."
> "What 'persona'?" Chia felt a sinking feeling.
> "Zona Rosa," said the Etruscan, "was the persona of Mercedes Purissima Vargas-Gutierrez. She is twenty-six years old and the victim of an environmental syndrome occurring most frequently in the Federal District of Mexico."
> … "Then I can find her," Chia said.
> "But she would not wish this," the idoru said. "Mercedes Purissima is severely deformed by the syndrome, and has lived for the past five years in almost complete denial of her physical self." (Id, 285).

Zona Rosa, then, reflects Donna Haraway's argument that 'severely handicapped people can (and sometimes do) have the most intense experiences of complex hybridization with other communication devices.'[77] While Laney's body wasted away due to his obsession with the datascape, by contrast information and communication technologies provided Mercedes Vargas-Gutierrez with the crucial tools needed to digitally refashion her embodied image. Through Zona Rosa, she was able to live a life more in line with her own choices rather than an existence dominated by her physical disfigurement.

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[77] Haraway, 'A Cyborg Manifesto', p. 178.

Moreover, the story of Zona Rosa illuminates Gibson's alliance with Scott Bukatman's argument that the 'imagined' realities of the digital world may deconstruct existing notions of subjectivity, but '[s]uch a deconstruction does not point to the *annihilation* of subjectivity, but rather to the limits of the existing paradigm.'[78] For Mercedes Vargas-Gutierrez her decidedly artificial notion of subjectivity includes elements of identity informed by a technologically mediated digital realm, a locale far more flexible to her needs than the material world by itself, where her physical condition would dominate. Moreover, the juxtaposition of characters such as Laney and Zona reinforces the notion that new technologies and the spaces they enable are neither intrinsically positive or negative in terms of embodiment but rather become so only when utilised by individuals. Thus for Laney, his obsession with the datascape ultimately proves to be his downfall, whereas for Mercedes/Zona technologies provide the means to lead a fuller life, not as restricted by the disabilities which have inflicted her embodied self. Nor does the 'death' of Zona Rosa end the usefulness of these technologies, for as Arleigh explained to a saddened Chia, eventually 'somebody else would turn up, somebody new, and it would be like they already knew you' (*Id*, 291).

In Michel de Certeau's work, the abilities to write and construct bodies, and bodily images, are also seen as extremely powerful. As he argues:

> What is at stake is the relation between the law and the body—a body defined, delimited, and articulated by what it writes. [… The proper] engraves itself on

[78] Bukatman, *Terminal Identity*, p. 180.

> parchments made from the skin of its subjects. It articulates them in a juridical corpus. It makes its book out of them.[79]

However, there is more than the 'proper' way to read and write a text. de Certeau continues by arguing that reading itself can constitute an unauthorised and unofficial form of writing (or re-writing) that he dubs 'poaching':

> Far from being writers—founders of their own place, heirs of the peasants of earlier ages now working on the soil of language, diggers of wells and builders of houses—readers are travellers; they move across lands belonging to someone else, like nomads poaching their way across fields they did not write, despoiling the wealth of Egypt to enjoy it themselves.[80]

Poaching thus constitutes tactical text-acts baring significant similarities with *bricolage* and which can resist the strategic power of the law in certain, if often short-lived, cases. However, with new digitally-enabled modes of resistance, artificial spaces are populated by citizens like Zona Rosa who have found tactics of bodily writing, poaching from the corpus of history and iconography, which can prove more lasting than de Certeau's model allows. It is also significant that in *Textual Poachers*, Henry Jenkins builds upon de Certeau's notion of poaching and argues that fan culture is today's most focused and widespread community of poachers, while Gibson purposefully situates Chia and Zona Rosa as friends who have met through their considerable involvement in the fan community around the ironically named rock group Lo/Rez.[81]

In *Collective Intelligence*, Pierre Levy argues that while the mass media of the twentieth century was characterized primarily by wide-scale distribution and reproduction, the

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[79] de Certeau, *Practice of Everyday Life*, pp. 139-40.
[80] de Certeau, *Practice of Everyday Life*, p. 174.
[81] Jenkins, *Textual Poachers*, especially pp. 9-119.

digital and informatic media of the twenty-first century have far more potential to become widespread 'somatic technologies' which re-establish links between bodies, information and digital media. Moreover, far from a competitive model, Levy argues further that these connections would form a symbiotic relationship, not one where some parts override or exclude the other.[82] For Zona Rosa, these theoretical insights are self-evident through the significant time 'she' spent both in her own digital realms as well as interacting, at times, with/in the archetype of artificial space, the Walled City. The connection between Zona and Mercedes is not simply a fictional versus 'real' relation, but rather a symbiotic connection which enhances Mercedes' embodied options beyond the 'proper' predicament of her physical disabilities.

Investigating the subjectivity and embodiment, or lack thereof, of Rei Toei proves a somewhat more difficult task in that she does not possess a material body and may ostensibly be considered no more than an extremely complex array of information and communications software. When Yamazaki first describes Rei to Laney, he explains she is a virtual singer, an 'idoru': '"Idol-singer." She is Rei Toei. She is a personality-construct, a congeries of software agents, the creation of information-designers. She is akin to what I believe they call a "synthespian," in Hollywood' (*Id*, 92). However, in *All Tomorrow's Parties* when Rei appears to Rydell in holographic form, she claims that 'this is a hologram … but I am real' (*ATP*, 153). Rei's reality or sentience is a point of contention in the Bridge trilogy: for some Rei is simply the latest and most advanced

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[82] Levy, *Collective Intelligence*, pp. 48-9.

'software dolly wank toy'; but for others she represents an 'original concept … almost radical', complete with the intrinsic ability to think for herself and define her own existence (*Id*, 122; 144). When Colin Laney first meets her he anticipates 'some industrial-strength synthesis of Japan's last three dozen top female media faces. That was usually the way in Hollywood, and the formula tended to be even more rigid [for software creations] … their features algorithmically derived from some human mean of proven popularity' (*Id*, 175). However, Laney realises 'she was nothing like that', and when they are introduced 'the eyes of the idoru, envoy of some imaginary country, met his' (*Id*, 176). Ostensibly, the idea of a purely informatic construct being sentient appears ridiculous, but as Donna Haraway has pointed out, contemporary developments such as the Human Genome Project are founded on the premise that a human being can be reduced to 'an information structure that can exist in various physical media.'[83]

In Dani Cavallaro's recent analysis of Gibson's work, she implicitly concludes that Rei does not have a legitimate individual identity, but is simply an object or thing, evinced in references to Rei as 'the idoru' or 'it', rather than 'she.'[84] However, utilising Judith Butler's idea of performativity, I would argue that Rei's discursive identity is sufficiently legitimate to warrant her own chosen gender identity. Butler has argued in *Gender Trouble* that while much recent feminist criticism has focused on 'gender' as a construction, opposed to an embodied biological bedrock of sex, she argues that 'sex' is

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[83] Donna Haraway, *Modest_Witness@Second_Millenium.FemaleMan©_Meets_OncoMouse™*, New York, Routledge, 1997, p. 246.
[84] Dani Cavallaro, *Cyberpunk and Cyberculture: Science Fiction and the Work of William Gibson*, London and New Brunswick, Athlone Press, 2000, pp. 79-83.

just as constructed as 'gender'. For Butler there is no pre-discursive reality. Butler argues that identity and gender are 'performative', created and maintained through the repetitions of day to day existence in everyday life. She argues further that the performance of gender is what *constitutes* the idea of a pre-discursive 'sex'. In other words, gender comes first through repeated performance and 'sex' is created as a *product* of these performances.[85] Rei reflects Butler's idea of performativity brilliantly: she is not 'real' but a discursive entity; she *performs* her gender and that performance is what positions the arbitrary selection of her 'sex'. Following Butler's predominantly post-structuralist theory, Rei's discursive identity appears as legitimate as anyone else's since all identity is discursive and defined not through materiality, but through performativity.

By contrast, N. Katherine Hayles argues that reducing 'the body' to a 'primarily, if not entirely, linguistic and discursive construction' is one of the postmodern beliefs that will 'stupefy' and confound future generations.[86] For Hayles, a discursive body only makes sense as a universalised concept, and cannot address the specificities of individual identity.[87] She argues that it is impossible to meaningfully separate consciousness from embodiment as the mechanisms of thought and cognition are intrinsically interwoven with 'the specifics of place, time, physiology and culture.'[88] Hayles' concerns are

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[85] Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity*, New York, Routledge, 1990, pp. 134-141. (Following criticism of her work, Butler's ideas of discursivity and performativity are more deeply defined and qualified in her later work.)
[86] Hayles, 'The Materiality of Informatics', p.147.
[87] Hayles, 'Materiality of Informatics', p. 152.
[88] Hayles, 'Materiality of Informatics', p. 155.

addressed to some extent through Rei's part in the final showdown with Cody Harwood in *All Tomorrow's Parties*. One of the main points of contention between Harwood and the group rallied against him, which included Rei, was the deployment of a device called a 'nanofax' which was installed in stores across the world. The nanofax employs nanotechnology – the technological ability to rearrange matter at the molecular level according to an outside design – the implications of which are that given the necessary raw materials, *anything* can be created. Harwood, who understands the radical implications of the nanofax, explains that he wishes to control the device's deployment so that he can usher in 'the advent of a degree of functional nanotechnology in a world that will remain recognisably descendant from the one I woke in this morning' (*ATP*, 250). However, his plans are defeated, and when the first Nanofax is sent, Rei manages to insert herself – essentially an elaborate 'sea of code' at this point – into the Nanofax's assembly routine so that when the light 'above the hatch turns green, and the hatch slides up … out crawls, unfolds sort of, this butt-naked girl' (*ATP*, 268). Moreover, the process is replicated across the world so that literally thousands of completely material and (to all appearances) entirely human Rei Toeis have transgressed the boundary between the material and the digital to emerge, completely embodied, into the 'real' world. In terms of Gibson's position on embodiment, Rei's transformation illuminates the fact that while Rei's initial characterisation may support Butler's idea of discursive performativity, her eventual decision to leave the digital realm for the material world shows Gibson's ultimate allegiance is to the embodied material form as a necessary and significant site of identity.

As the virtual, disembodied Rei could be considered the ultimate expression of the bodiless existence, her overriding desire and decision to seek out and embrace material embodiment illuminates Gibson's thorough rejection of a 'will to virtuality'. However, when thousands of Rei Toeis emerge across the globe, readers quickly realise that this is not looking backward conservatively to a previous, static notion of embodiment, but forward to new, symbiotic forms where material bodies and informatic realms are deeply intertwined. Ross Farnell argues that the resolution of Rei's story actually turns the 'will to virtuality' on its head:

> Rei inverts the usual cyberspatial trope of transcendence: created initially as digital code, she moves toward the corporeality of Rez and the complexity of analog information, desiring to escape the confines of the *digital* prison via some inconclusive transcendence *toward* the flesh.[89]

However, the Bridge trilogy does not render the digital realms as undesirable but rather as undesirable *by themselves*. Indeed, Rei Toei, a media-generated, informatically-enabled subject who crosses the boundary between the digital and material could, ironically, be considered as the avatar for artificial spaces and their core characteristic: tactically bridging informatic and physical spaces, and bodies, through symbiotically and symbolically leaving one foot in each, blurrily bounded, realm. Moreover, as the enabling technology which facilitates Rei's climactic transformation, nanotechnology leaves readers in the grip of Michelle Kendrick's insight that as 'technologies grow even

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[89] Farnell, "Posthuman Topologies', p. 472. A similar point is made by Graham Murphy in "Post/Humanity and the Interstitial: A Glorification of Possibility in Gibson's Bridge Sequence," *Science Fiction Studies*, 30.1, 2003, p. 79 in which he argues 'One of the key narrative threads in *All Tomorrow's Parties* is Toei's emergence from the strictly digital realm into an analogue (i.e., "offline") reality. This emergence is the final play of her randomness, whereby she achieves (corpo)realisation as an analogue presence.'

smaller, and finally disappear into an organism, the space of technology is troublingly like the space of the body,' where causing trouble is clearly a tactical act. [90]

Conclusion

William Gibson's Bridge trilogy is a fruitful arena in which to examine, explore and tentatively map emerging artificial spaces. Through the work of Michel de Certeau, artificial spaces are clearly tactical, opening up new realms of resistance and completely new political possibilities. The Bridge trilogy simultaneously allows a broadening of de Certeau's perspectives, illuminating the increased impact and longevity of tactical acts due, in considerable part, to the possibilities enabled by digital information and communication technologies. For Gibson, the Bridge trilogy marks a substantial shift from his earlier work, no longer (arguably) devaluing the body as 'meat' as in *Neuromancer*, but now focusing on the ramifications of technology on embodiment for individuals in artificial space. The strategic reinforcement of a conservative, surveillance and security-driven world of proper place as seen in the Bridge trilogy, mirroring the global politics of the early twenty-first century, at first appears deeply pessimistic. However, the combination of tactical moments of resistance, interstitiality and collective intelligence, facilitated and reinforced by new digital technologies, have seen the formation of ongoing pockets of individuality and resistance that cohere into artificial spaces. Moreover, Rei Toei's transition from a sentient 'sea of code' to a fully embodied individual illuminates Gibson's implicit belief that the human body and

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[90] Kendrick, "Space, Technology and Neal Stephenson's Science Fiction," p. 58. It should be noted, though, that Kendrick was not writing in relation to the Bridge trilogy, although that does not negate the importance of her argument.

embodiment remain both necessary and desirable elements of human subjectivity. The implications of nanotechnology, however, point to further destabilisation of that subjectivity, shifting away from a humanist conception where organic and mechanical are oppositional ideas, to a posthuman world where nanotech places both human and technological as part of the same ontological spectrum.

In artificial spaces, tactical resistance is a way of life and the ongoing flux of spatial activity is a reassuring, not worrying, blur. Yet, while artificial spaces contain many new possibilities, forgetting or ignoring embodiment is not one of them. Artificial spaces are realms where specific, unique subjects have new, lasting, tactical opportunities. For every individual, life in artificial space always entails the intertwining of embodiment, materiality and information in a symbiotic and inseparable matrix which, in turn, broadens the very spheres of subjectivity and spatiality into the realm of each other.

CHAPTER 4: ARTIFICIAL PEOPLE

Introduction

In order to provide an initial cinematic context for the idea of artificial people, this chapter briefly extrapolates from one of the most widely cited science fiction film franchises. In the *Alien* series—*Alien* (1979), *Aliens* (1986), *Alien*^{3} (1993) and *Alien: Resurrection* (1997)—while the central concern is with the predominantly violent relationship between humans and acid-for-blood aliens, the four films[1] also create a meaningful narrative about non-human artificial entities. In the first *Alien* film, the science officer Ash turns out not to be a biological human being, but rather a manufactured entity who, being an icon of Thatcherite economic rationalism, on 'company orders' attempts to kill the crew in order to save the alien since it has higher commodity value than they do. Ellen Ripley, the only survivor of that original crew, learns quickly to distrust non-human entities, leading to a confrontation in the sequel when she realises, once again, there are more than 'just' humans on board the ship in which she is travelling:

> *Ripley:* You didn't tell me there was an android on board! Why not?
> *Burke:* It's standard procedure. Every ship has a synthetic on board.
> *Bishop:* I prefer the term 'Artificial Person' myself.

Bishop's request to define his own sense of species or self initially falls on deaf ears, but in the course of *Aliens*, he earns his personhood, ultimately sacrificing himself in order to save Ellen and her newfound child, Newt. While only appearing briefly in the third film, a re-activated but damaged Bishop also exhibits the vainly 'human'

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[1] There is arguably a fifth film, the cross-over prequel *AVP: Aliens Vs Predator* (2004) but it features neither Ripley nor any artificial people and is widely considered a cynical commercial effort rather than something worth placing within the *Alien* series canon.

desire in asking to die rather than be mediocre. By the last in the series, *Alien: Resurrection*, artificial people have become self-reproducing and a second-generation artificial person, Call, is amongst the few posthuman survivors, and the least morally questionable, after the human military once again tries to harness the aliens as a commodity of destructive value.[2] The development of artificial people in the *Alien* series can be seen alongside similarly themed films such as Ridley Scott's other canonical science fiction movie *Blade Runner* in which the 'more human than human' Replicants leave the moral and epistemological boundary between 'natural' humans and manufactured humanoids disconcertingly blurred.[3] While neither the *Alien* films nor *Blade Runner* are the focus of this chapter, Bishop's desire to have his personhood recognised is a metonym for a science fiction film trope in which the boundaries between artificial and natural, as well as object and person, are constantly interrogated. That trope provides initial context for this chapter's exploration of cinematic conceptualisations of artificial people.

Returning to the central characteristic of science fiction film, the ambiguities inherent in the tension between spectacle and speculation (discussed in depth in the first chapter), this chapter's exploration of artificial people is divided into two parts, each focusing on a trilogy of Hollywood blockbuster films. The first section examines the *Matrix* trilogy which is widely considered the ultimate fusion of special effects, a revived cyberpunk aesthetic, expansive genre elements and cinema as

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[2] For a fuller account of the four films see Catherine Constable, "Becoming the Monster's Mother: Morphologies of Identity in the *Alien* Series," *Alien Zone II*, Ed. Annette Kuhn, London & New York, Verso, 1999, pp. 171-202; and on its connections with other films in this thesis see A. Samuel Kimball, "Conceptions and Contraceptions of the Future: *Terminator 2, the Matrix* and *Alien Resurrection*," *Camera Obscura*, 17, 2, 2002, pp. 69-107.

[3] For a detailed exploration of the 'more human than human' Replicants and the uncertain ontological status of the film's (anti-)hero, see Scott Bukatman, *Blade Runner*, BFI Modern Classics, London, British Film Institute, 1997, especially pp. 64-85.

commodity culture. Despite its emphasis on computer-generated effects and violence all the way from kung fu to globe-spanning military battles, the *Matrix* also wears its function as speculation close to the surface, notably evident in the publication of at least four edited collections addressing the philosophy of the trilogy.[4] At this junction a qualification is required: while both sections focus on film trilogies, they are perhaps more accurately described as franchises. Both are formed building upon elements that existed prior to the films, and their narrative and speculative spans extend far beyond the films themselves thanks to 'authorised' material such as tie-in books, DVD extras and extended edition releases (with either more film, more extras, or more of both), and unauthorised materials such as fan fiction.[5] While the unofficial extensions are beyond the scope of this study, the second section turns to the *Lord of the Rings* films but primarily addresses their production, special effects and spectacular function rather than beginning with their narrative. In examining the production of spectacle, most notably in the digitally derived character Gollum, it is argued that rather than just trying to create bigger explosions, machines and spacecraft, special effects are increasingly about attempting to get more and more of the human form into the frame of the spectacle. Indeed, this chapter leads to the conclusion that spectacle and speculation are not separable, even prior to a film's release in the many dialogues and debates of postproduction, and that in the early years of the third millennium, spectacle and

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[4] Such as Glenn Yeffeth, ed., *Taking the Red Pill: Science, Philosophy and Religion in the Matrix*, Dallas & Chicago, BenBella Books, 2003; Matt Lawrence, *Like a Splinter in Your Mind: The Philosophy Behind the Matrix*, Oxford, Blackwell Press, 2004; and William Irwin, ed., *The Matrix and Philosophy: Welcome to the Desert of the Real*, Chicago, Open Court, 2002.

[5] For a good summary of unauthorised 'fan' extensions and engagements with popular cultural forms, see Henry Jenkins, *Textual Poachers: Television Fans and Participatory Culture*, New York & London, Routledge, 1992 and also Henry Jenkins, "Quentin Tarantino's Star Wars? Digital Cinema, Media Convergence, and Participatory Culture," *Rethinking Media Change: The Aesthetics of Transition,* Eds. David Thorburn and Henry Jenkins, Cambridge & London, MIT Press, 2003, pp. 281-312.

speculation posit the inherent importance of the links between embodied form and digital mediation.

Matrices of Embodiment: "He's a Machine!"

In the tradition of *2001: A Space Odyssey*, the tension and ambiguities between the science fiction staples of speculation and spectacle position *The Matrix* within a tableau of contradictions. In the British Film Institute's 'Modern Classics' series, Joshua Clover argues that,

> *The Matrix* will fail any test of coherence. Indeed, it flickers under the sign of two contradictions, which correspond to its paired sci-fi commonplaces. It's a historic advance in digital entertainment that is unpacifiably anxious about the dangers of digitality; it's a critique of spectacles that is itself a spectacle.[6]

Radical ambiguity is also fuelled by the numerous genres which inform the narrative and aesthetic of the film, borrowing from 'Action, Western, Romance, Japanese Anime, and Hong Kong Kung Fu genres,'[7] as well as reviving the 'cyberpunk aesthetic' of William Gibson and the other 'mirrorshades' writers including Bruce Sterling and Pat Cadigan[8] (which, in turn, had already been hailed as the apex of postmodern pastiche).[9] Layered on top of the generic diversity, *The Matrix* trilogy—*The Matrix* (1999), *The Matrix: Reloaded* (2003) and *The Matrix: Revolutions* (2003), all co-directed by the brothers Andy and Larry Wachowski and produced by blockbuster guru Joel Silver—also borrowed symbolism and narrative elements from a diverse range of mythologies and religions, including the ancient Greek gods, Buddhism and Judeo-Christianity. Added to that is a stylistic homage to both videogames and comic books, resulting in *The Matrix* trilogy containing enough

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[6] Joshua Clover, *The Matrix*, BFI Modern Classics, London, British Film Institute, 2004, p. 15.
[7] Chad P. Barnett, "Reviving Cyberpunk: (Re)Constructing the Subject and Mapping Cyberspace in The Wachowski Brothers' Film *The Matrix*," *Extrapolation*, 41, 4, 2000, p. 363.
[8] Barnett, "Reviving Cyberpunk," p. 362.
[9] Fredric Jameson, *Postmodernism or, The Cultural Logic of Late Capitalism,* London, Verso, 1991, p. 38.

ambiguities and references to attract almost any reading or analysis. Indeed, existing examinations of *The Matrix* have concluded that the film offers everything from 'a second new testament for a new millennium, a religious parable of the second coming of mankind's messiah'[10] to a 'pomophobic' betrayal of the cyberpunk genre,[11] to the epitome of consumer culture in which the franchise 'isn't just a totem of the era, but its ultimate product: a massively capitalised, wickedly digitised convergence of industry and desire.'[12] For the purposes of this chapter, *The Matrix* films are also ripe with ideas about embodiment, technology and the complex relationships between those two interlinking realms. However, the diversity of interpretations[13] and origins serve to highlight the fact that while this examination pays attention to medium specificities, both the *Matrix* and, later, *Lord of the Rings* films, make the boundary between media, at best, difficult to delineate.

Before turning to the films themselves, it is worth addressing the position of the *Matrix* franchise in relation to, or indeed as, economics. For all their speculative potential the three films are clearly successful consumer products in their own right.[14] In film scholar Sean Cubitt's *The Cinema Effect*, he analyses film in relation to commodity culture, arguing that the form's depoliticisation has led to a condition of 'post cinema', wherein for 'technological films' such as the *Matrix* trilogy,

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[10] Schuchardt, "What Is the Matrix?", p. 5.
[11] Laura Bartlett and Thomas B. Byers, "Back to the Future: The Humanist *Matrix*," *Cultural Critique*, Winter, 2003, p. 30.
[12] Clover, *The Matrix*, p. 72.
[13] It is also worth noting that while this chapter is addressing the entire *Matrix* trilogy (and its prequel animated series, *The Animatrix*), some of the critical sources and studies cited were written prior to the sequels' cinema release.
[14] For example, Chad Barnett in "Reviving Cyberpunk," p. 362 notes that on a budget of $US63 million, the first film grossed over $US165 million at the US domestic box office (and considerably more again internationally).

> It is no longer the case that films in some way respond to, refract, express, or debate reality or society. Mass entertainment has abandoned the task of making sense of the world, severing the cords that bound the two together. This, as much as economics, is what has driven the North American cinema into the realm of digital imaging.[15]

However, despite Cubitt's pessimistic tone, he does highlight the utility of *The Matrix* series, not as films which seek to explore a 'reality' outside of the films' 'unreal' diegesis, but rather as a conversation which positions the digital as *part* of a meaningful reality. Moreover, it should be noted that Cubitt's ultimate purpose in mapping the cinema effect of the twentieth century, under the aegis of commodity culture, is to argue for a twenty-first century cinematic form which is functionally different. In suggesting the form of more politically useful cinema, Cubitt argues that it 'must include communication with an environment no longer pristine and a technology no longer tainted.'[16] Ironically, these traits are central to the analysis below which looks at embodiment, technology and the epistemological and narratological conversations and convergences between the two. *The Matrix* franchise is thus, in direct contradiction, at the pinnacle of cinema and/as commodity culture but is also simultaneously facilitating explorations of bodies and machines which locate meaning beyond their utility as part of consumer culture.

The opening scene of *The Matrix* immediately situates the viewer not just in the cinema, but also in a direct relationship with technology at both narratological and physical levels. After the opening credits, the viewer is greeted by an impatiently blinking rectangular green cursor. To users of personal computers (PC) in the nineteen eighties and early nineties, prior to the ubiquity of Microsoft's Windows operating system, this cursor is completely familiar as it is the first thing seen after

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[15] Sean Cubitt, *The Cinema Effect*, Cambridge, Mass. and London, MIT Press, 2004, p. 245.
[16] Cubitt, *The Cinema Effect*, p. 364.

they flicked the power button to 'on'. The cursor remains on-screen long enough for many viewers to feel the embodied need to reach for the keyboard and type 'run' (a sensation doubly felt when watching *The Matrix* DVD on a computer screen, an effect clearly intentional given the inclusion of extra features which can only be accessed by playing the film on a PC). While the viewer is thus located in a position behind the screen, a viewing subject for a filmic object, that sense of liberal humanist clarity is troubled after a few lines of green code are seen and the 'camera' then zooms *into a single number*, suggesting a physical depth behind an informatic code represented on the supposedly depthless cinematic surface. The screen, that boundary between actual and imagined worlds, as well as subject and object, is disruptively permeable. When the zoom ends (having pushed *through* the code) on a group of police officers, the subject of their action, Trinity—a leather-clad hacker sitting behind a computer screen within the world behind the code—is situated as the character with whom viewers are asked to identify. However, as the police attempt to arrest Trinity, they are faced with her seemingly superhuman physical abilities.

The opening fight between Trinity and the police is powerfully punctuated by the debut of the signature special effect of the *Matrix* trilogy, generally referred to as 'bullet-time'. During this effects shot, Trinity appears to defy gravity and physics by jumping and hovering in mid-air as the camera rapidly moves in an arc centred on her floating physical form, before she seemingly resynchronises with the norms of diegetic speed and quickly despatches the police with some graceful kung fu moves. While the name bullet-time is appropriate in its reference to slowing the focal image on screen to a speed allowing the motion of even a bullet to be seen, it is somewhat ironic that the computer-facilitated bullet-time in its first use allows the viewer to

focus longer and harder on the embodied form of Carrie-Anne Moss. Moreover, in contrast to the bigger explosions and longer spaceships which iconically inhabit blockbuster science fiction films, bullet-time is in many ways, as Joshua Clover argues, 'the very opposite of a special effect.'[17] This is not the spectacle of the digital, but rather the digital facilitating the spectacular focus on the physicality of embodied actors. Furthermore, while bullet-time seems to rupture the film's diegesis, when viewers discover that this part of the film is located within the informatic construct of the matrix, then just 'as its brief passages must seem to Neo or Trinity, these are moments of clarity for the viewer as well; bullet time shows the world as it is,'[18] or more accurately, bullet-time shows the cinema viewer the world of the construct at the speed at which it is comprehended by Trinity and other 'red-pills' (those who understand what the matrix is). Thus audiences come to realise that bullet-time is linked to the supposedly physical perception of the characters, not the purported time or logic of the matrix construct itself. While Sean Cubitt sensibly points out that in most films 'the emergence of cinematic time as special effect [leads to] … the universe of the synthetic', in the synthetic world of the matrix, the bullet-time special effects diegetically point to the non-synthetic realm.[19] Ironically, the initial (and frequent) focus of the digitally precise bullet-time special effect[20] is not on technology or even artillery, but rather on the fleshy (if usually leather-clad) human body. Bullet-time is thus a spectacular technology which emphasises the links between digital precision and embodied physical form.

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[17] Clover, *The Matrix*, p. 66.
[18] Clover, *The Matrix*, p. 66.
[19] Cubitt, *The Cinema Effect*, p. 41.
[20] Bullet-time is not *just* a digital effect, but rather uses digital technology to synchronise visual information from video cameras and still cameras which have captured those images in a precise split-second order that is orchestrated by, and relies upon, computer control.

In the following scene, the film introduces Keanu Reeves' character Neo, the unknowing would-be digital messiah. Just as Trinity was first introduced sitting behind a computer screen, so too is Neo, although he is initially asleep, but soon awakened by a message mediated by his computer. Even though he was asleep, it is significant that Neo has chosen to wear headphones, showing that he has in some ways chosen to be 'plugged in'. In waking, Neo's possible dream-state is merged with a mysteriously communicative computer while the headphones highlight his connection with the banal technologies within the construct. When a knock on the door distracts Neo, his visitor, Choi, purchases a disc of illegal programs which Neo ironically fetches from a hollowed out copy of Baudrillard's postmodern tome, *Simulation and Simulacra*, suggesting that while the book is hollow, when filled with code it has some sort of depth. Just before departing with his goods, Choi thanks Neo, exclaiming that 'you're my saviour man, my own personal Jesus Christ,' initiating a long series of references to Neo (an anagram of One and of the almost timeless Eon are well as meaning 'new') as a messianic figure.

While the links between Neo and Christ or the messiah are many and plentiful in the *Matrix* trilogy (which ends, for all intents and purposes, with Neo's digital crucifixion), the films do not just refer back to existing ideas, but rather, like the generic borrowing, use existing religious metaphors and myths to playfully articulate new connections. As Sean Cubitt argues,

> Neo does not "equal Christ," though he is Christlike in the sense that he derives from Christianity the role of a saviour who comes to redeem humankind. What we note here is the depth and complexity of allegory, and its social nature. Unlike symbolism, which tends to be either private or developed for a specific

> work, allegory depends on the social construction of a ring of meanings that cannot be adequately addressed with a single concept.[21]

In other words, while a symbol attempts to create a direct referent—Neo *is* the messiah—an allegory in representing something also injects part of the sign into that representation, so even if Neo is allegorically linked to the messiah, the process of linking infuses that which is represented with the thing representing. It follows, then, that Neo's role in the film and Neo's narratological similarity to the messiah are more of a synthesis than a symbol, allowing the meanings to intermingle and intermix to produce new ideas which draw on, but are not directed by, these two (or more) parts of the allegory. The allegorical function is also at work in many other borrowings within the *Matrix* films, facilitating, for example, Lawrence Fishburne's character Morpheus to function as a sort of John the Baptist while still clearly playing with his name's origin as the ancient Roman god of dreams.[22]

After his confusing night, Neo, also known as Thomas Anderson at his 'day job', is late for work and is called into his boss' office. He is grilled about not respecting the connected system of which he is part—the giant software corporation which goes by the less than subtle name MetaCortex. The company itself ties into Sean Cubitt's argument that in replacing

> the society of people, the society of images turns the film into an agent: the cyborg orator. The typical form of the contemporary cyborg is not Robocop or the Terminator but the transnational corporation, a planet-spanning hybrid of human biochips, networked communication devices, and offshore factories.[23]

Reinforcing Cubitt's point, the MetaCortex company is not just Neo's employer, but symbolic of the larger system of which he is unknowingly part: the virtual reality

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[21] Cubitt, *The Cinema Effect*, p. 353.
[22] Schuchardt, "What Is the Matrix?", p. 7.
[23] Cubitt, *The Cinema Effect*, p. 126.

construct known as the matrix. Further, while in his boss' office, the conversation takes place as window-cleaners outside noisily squeegee away the soapy suds. Cubitt notes that the distraction of this image, and the over-the-top sound of the squeegee, 'oversignal their function' since this is important exposition—Neo later attempts to escape using the window-washer's platform—but lacks subtlety, aligning the film with its videogame sensibilities in which such explicit exposition would be more appropriate, signalling the game-player that the window would later provide an interactive source by which to escape.[24] However, the two men washing the windows are also important since on a close viewing, informed audiences realise that these two bumbling cleaners are actually played by the directors Andy and Larry Wachowski.[25] With slightly more subtlety, this self-casting situates directorial vision and control as the mechanism which draws Neo to his point of escape. Despite the elaborate set-up, Neo fails to utilise this exit not because he forgets where it is, but rather because he is asked to escape via window-ledges and he, rather ironically, appears to be afraid of heights, a decidedly embodied reaction.

In the following scene, Neo's interrogation by the Agents—sentient programs who police the workings of the matrix and whose 'physical' forms are stronger and faster than ordinary humans—it becomes apparent that it is not Trinity or Morpheus' revelations that challenge Neo's confidence that life (unknowingly) inside the matrix is real, but rather that insight comes when the coherent boundaries of embodiment

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[24] Cubitt, *The Cinema Effect*, p. 229. On the videogame structure and aesthetic in the *Matrix* films also see Barnett, "Reviving Cyberpunk," p. 363.

[25] The irony of this scene is particularly pronounced when the manner in which the directors are washing the windows is acknowledged. They are doing what appears to be the least professional and successful window wash ever, randomly squeegeeing away soapy water with no structure or system. This may very well be a pointed comment about directorial vision and directorial control being two quite separate things in a studio-driven financial system (or just a very long nod at the directors function as the narrative guides who force Neo to cross to the other side of the looking glass).

are radically ruptured. After initially trying to gain Neo's trust, he proves extremely uncooperative during his interrogation and demands a phone-call, only for Agent Smith to respond, "Tell me, Mr Anderson, what good is a phone call, if you're unable to speak?" Neo looks around defensively, but Smith's threat is enacted by manipulating the very coherence of Neo's physical form: his skin suddenly stretches over his mouth in a manner entirely inconsistent with the physical and embodied norms that Neo has learnt. Then, to add to the rupture with his embodied understanding, Neo is held down by the Agents as they insert what initially appears a mechanical probe, but morphs into a far more flailingly energetic and organic lifeform (with a glowing red eye reminding viewers of a lineage of artificiality all the way back to HAL), which then burrows into Neo's chest in a technologically-enabled rape scene which shatters Neo's previous coherent sense of embodied certainty.

The morphing techno-organic bug is significant as it signals the symbolic traffic between organic, technological and the considerable grey area between the two in which most of the *Matrix* trilogy takes place. The title of Neo's interrogators highlights this spectrum as well, as their status as Agents is consistent with their men-in-black FBI attire, but also with the status as Agents within an informatic system The term 'agent' is, of course, often used in Artificial Intelligence and Artificial Life discourses to signify a specific decision-making entity. As film theorist Vivian Sobchack argues in her phenomenological study *Carnal Thoughts*,

> It is no accident … that in our now dominantly electronic (and only secondarily cinematic) culture, many people describe and understand their minds and bodies in terms of computer systems and programs (even as they still describe and understand their lives in terms of movies). Nor is it trivial that computer systems and programs are often described in terms of human minds and bodies (for example, as intelligent or susceptible to viral infection) and that these

> computer-generated "beings" have become the explicit cybernetic heroes of our most popular moving-image fictions…[26]

The *Matrix* films playfully build upon the existing symbolic interchange between organic and technologic metaphors by adding, among other duality puns, names and actions which can function in either context. However, the seeming ease of this slippage also clearly highlights the connectedness of the artificial and organic, not their separability. Moreover, these connections illustrate an emerging lexicon of interconnectivity which posits the human protagonists themselves as artificial people.

The intertwining of humanity *en masse* and the artificial becomes far more apparent in the next sequence in which Neo is 'freed' from the matrix. Initially he is contacted by Morpheus and collected by Trinity who 'de-bugs' Neo in a manner almost as violent as his initial implantation. It is worth noting that while the bug appears as a living techno-organic form when it is first removed, as soon as it is separated from Neo it returns to a more clunky mechanical configuration, already suggesting that the 'aliveness' of the machines is somehow connected to human beings.

The machine intelligences' dependence on human bodies is further and more deeply explored as Neo meets with the hacker leader Morpheus and accepts the challenge of confronting the matrix. Mixing metaphors and references from Lacanian psychoanalysis[27] with *Alice in Wonderland* and *The Wizard of Oz*, Neo then plunges through the looking glass and awakens in the diegetically real world of 2199 in

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[26] Vivian Sobchack, *Carnal Thoughts: Embodiment and Moving Image Culture*, Berkeley, University of California Press, 2004, p. 137.

[27] See Jacques Lacan, "The Mirror Stage," Trans. Alan Sheridan, *Ecrits: A Selection*, London, Tavistock, 1977, pp. 2-6 for an argument about the mirror in the psychoanalytic formation of the subject (or 'Ideal-I' being visually formed).

which human beings exist in hermetically-sealed gel-filled red cocoons where their bodily energies are extracted to power artificial life, while their conscious minds 'exist' inside an informatic simulation called the matrix. However, far from an entirely mechanical world, the cocoon Neo is shocked to awaken within is startlingly organic and, as A. Samuel Kimball argues, is more like akin to an

> artificial womb in which he has been encased in a uterine fluid. Unsnapping a series of mechanical umbilici, the Matrix then flushes Neo from itself. From the point of view of the Matrix, Neo's release is like a miscarriage or abortion.[28]

In contrast, from Neo's subjective view (at least in retrospect), this is a moment of new beginnings, which is visually reinforced by his expulsion from the matrix cocoons along with a quantity of fluid via a series of ducts, emerging from a gaping hole and landing in the sea; a very clear and almost literal birth metaphor. Neo is immediately swept inside a waiting craft, the Nebuchadnezzar, by means of a metallic clamp which looks surprisingly like another umbilical cord as his pasty white arms flail at his sides. Like Laney's pathetic physical form at the end of *All Tomorrow's Parties,*[29] Neo has been inside a cocoon and only ever simulated the use of his body, his entire musculature is completely atrophied and in what is one of many instances of technological dependence outside of the matrix, the crew of Morpheus' ship use technology to artificially stimulate muscle growth and accelerate the development of Neo's physical senses. This scene has several instances in which Neo's innards are actually seen via a computer monitor, reminding viewers of the long history of bodily visualisation and remediation, as Catherine Waldby discusses

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[28] A. Samuel Kimball, "Conceptions and Contraceptions of the Future: *Terminator 2, the Matrix* and *Alien Resurrection*." *Camera Obscura*, 17, 2, 2002, p. 91.
[29] William Gibson, *All Tomorrow's Parties,* New York, G.P. Putnam's Sons, 1999, p. 260 (as discussed in chapter three).

Figure 10. Elements of Neo's bodily interior rendered on a computer monitor as his body is technologically rebuilt following his initial escape from the matrix. [*The Matrix*]

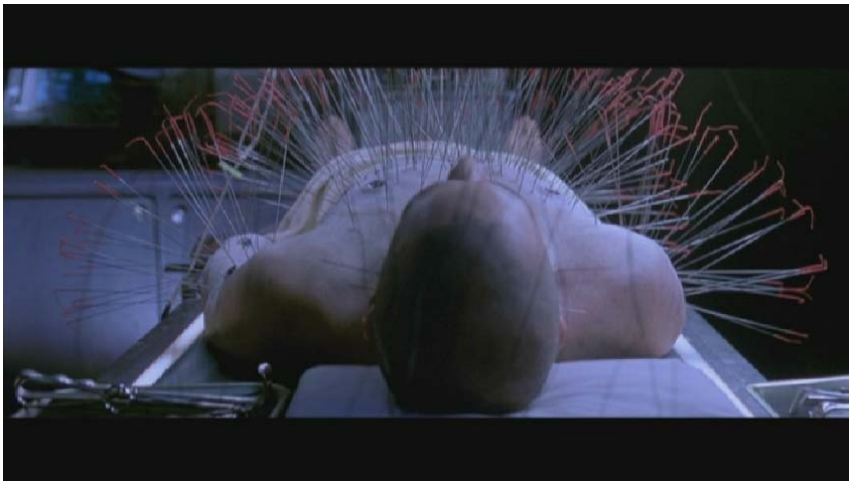

Figure 11. Technologies of (re)construction applied to Neo's atrophied muscles and body. [*The Matrix*]

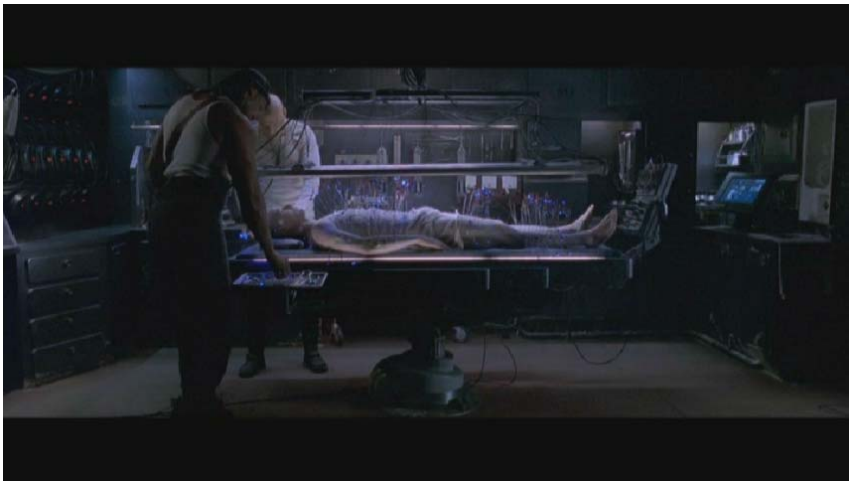

Figure 12. Neo, being rebuilt on the technological operating table in a visual space between life and death. [*The Matrix*]

in her work on The Visible Human Project (discussed in chapter two).[30] In a genre exemplifying moment, the science fictional film presents the contradiction of escaping machine bondage only to then rely on advanced technologies to rebuild and reconstitute the very embodiment Neo had always taken for granted.

While rather overblown and heavy-handed, it is nevertheless worth examining at length the core expository monologue contained in Morpheus' explanation to Neo of the war between humans and machines, which begins with a description of artificial intelligence:

> A singular consciousness that spawned an entire race of machines. We don't know who struck first, us or them, but it was us that scorched the sky. At the time they were dependent on solar power and it was believed that they would be unable to survive without an energy source as abundant as the sun. Throughout human history we have been dependant on machines to survive. Fate, it seems, is not without a sense of irony. The human body generates more bioelectricity than a 120 volt battery and over 25,000 BTUs of body heat. Combined with a form of fusion, the machines had found all the energy they would ever need. There are fields, Neo, endless fields where human beings are no longer born, we are grown. For the longest time I wouldn't believe it, but then I saw the fields with my own eyes, watched them liquefy the dead so they could be fed intravenously to the living. And standing there, facing the pure horrifying precision I came to realise the obviousness of the truth. … The matrix is a computer-generated dream world built to keep us under control …

From Morpheus' tale, three main points emerge. Firstly, that the diversity of machine intelligence is now enough to be considered a race, even by their enemies in a time of war, suggesting that the artificial entities of 2199 have moved beyond the origins of either artificial intelligence or artificial life to a level of diversity that may actually parallel organic ecologies. Secondly, the admission that 'we don't know who struck first' suggests that humanity has learnt some level of humility in enslavement, something not readily evident in Western politics in the early years of

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[30] Catherine Waldby, *The Visible Human Project: Informatic Bodies and Posthuman Medicine*, London and New York, Routledge, 2000.

Figure 13. A human child within the matrix-connected cocoon, sharing a visual and symbolic resonance with *2001*'s Star Child. [*The Matrix*]

Figure 14. Agent Smith's embodied anxieties are manifest as he confronts Morpheus' sweat and human smell! [*The Matrix*]

Figure. 15. Neo, the new messiah, is engulfed by a radiant and none too subtle cross during his digital crucifixion. [*The Matrix: Revolutions*]

the twenty-first century. Moreover, the notion that humans had destroyed the atmosphere and blackened the sky to disable the solar powered machine intelligences provocatively suggests that it is the artificial lifeforms who develop a more symbiotic, less polluting relationship with nature and the Earth's ecology.

Humanity, in their militaristic endeavours, actually created the dystopian wasteland haunting the world outside the matrix. Finally, while the idea of being a copper-top, a dweller inside the matrix simulation providing power for the machine world, is abhorrent to Morpheus and to Neo, the machine intelligences still show far more humility and compassion than human beings in similar positions of power; at least in the matrix no one *knows* they are enslaved (a notion which is addressed by numerous articles, especially in the philosophical collections addressing the *Matrix* films). In a direct visual reference to earlier science fiction cinema, it is worth noting that the digital image of the baby inside the matrix-cocoon seen during Morpheus' speech bears an uncanny resemblance to the re-embodied Star Child of *2001*, only now the child comes complete with an array of black latex cords connecting to an informatic world. The similarity nevertheless adds to the notion that being imprisoned in the matrix is somehow an important moment in human evolution (a reading reinforced by Cypher's betrayal of the human crew in exchange for a promise of re-integration into the matrix, which he knows full well to be 'unreal' in a conventional sense). From this narrative positioning of the technological entities in the film, their origins, as well as their actions in the sequels, suggest that in comparison to human beings who are immersed in the use of their technologies, the machines of the *Matrix* trilogy are equally, if not more, worthy of the name artificial people.

When Neo begins his training to join the war against the technological entities governing the world, it is telling that his first exercises are about learning to be a better fighter *within the matrix itself*. Indeed, Neo's trainer, the ironically named Tank, is introduced as his 'operator' rather than mentor or guide. The title seems apt when Tank begins Neo's training by uploading at high speeds the program for learning jujitsu straight into Neo's mind. At the end of a long day's uploading, Morpheus joins Tank as Neo is assimilating more training information and in response to a query about Neo's status, Tank replies with awe at Neo's abilities: "He's a machine!" This dialogue, while deeply ironic, is delivered deadpan by Marcus Chong, the actor playing Tank, and again highlights Sobchack's point about the meshing of categories both technological and embodied. Moreover, when it comes time to test Neo's newfound skills, this occurs in a kung fu fight with unabashed videogame aesthetics, Morpheus also making the point to Neo that his mind is treating the matrix as real, not simulated, but that insight allows Neo to move even faster, bending the informatic norms of the matrix simulation. Neo even tries to follow Morpheus in jumping the seemingly impossible distance between two skyscrapers, but fails and when he is 'unplugged' from the simulation, Neo is shocked to discover the pain and injuries felt inside the simulation have also occurred in the 'real' world. Morpheus simply explains that Neo's mind 'makes it real.' However, a better explanation is that mind and body are not separable so any experience, even directed at the mind, has inescapable consequences for the body at the same time.

Returning to the broader notion of cinema itself, the matrix appears in many ways to mimic or remediate the cinematic form. The matrix is the conceptual and narrative-

level literalisation of the move in late twentieth century cinema toward a 'spatialization of time' whereby temporal meaning is entirely reliant on spatial construction and representation.[31] However, the means of experiencing the matrix are closer to contemporary videogame interactivity than the (false presumption of) cinema viewers' passivity.[32] In both gaming and the matrix simulation, it is the fleshy human body which facilitates navigation of the dream-world, reinforcing the importance of embodiment even when interacting with various incarnations of informatics.

At first glance, the representations of gender in *The Matrix* are considerably more even-handed than in the earlier artificial intelligence films examined in the first chapter. Trinity's symbolic referent as the Father, Son and Holy Spirit is deeply empowering and when Neo appears to be lost, *she* takes the role of Prince Charming and wakes the sleeping lover, inverting a powerful, and powerfully gendered, cultural tale. However, it is also true that *The Matrix* relies on extremely caricatured ideas of race in the representation of many characters, from the whiteness of the men-in-black to the labouring African American operators in the human realm.[33] While these issues are less evident in the sequels, especially in the setting of the last human city, Zion, which has a globally representative racial diversity, it is still the case even there that the ruling council is predominantly white, while the cannon fodder of the military forces are predominantly non-white. Trinity's symbolic power

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[31] Cubitt, *The Cinema Effect*, p. 8 and also argued, as discussed in the previous chapter, by Vivian Sobchack, *Screening Space: The American Science Fiction Film*, New York, Ungar, 1987, p. 272.
[32] The viewing process is never passive; viewing involves a dialogue between cinematic object and thinking subject. However, the interactivity of videogames makes this point far more transparently.
[33] Lisa Nakamura, "Race in the Construct and the Construction of Race: The 'Consensual Hallucination' of Multiculturalism in the Fiction of Cyberspace," *Cybertypes: Race, Ethnicity, and Identity on the Internet,* London & New York, Routledge, 2002, pp. 61-85.

is also shed to some extent at the end of *Reloaded* when Neo reanimates her with a kiss and an oddly physical jumpstart of the heart; Neo's appropriation is complete when her untimely death in the machine city enacts the willing-to-die revenge subplot needed to bring the *Matrix* trilogy to a conclusion. Thus, while the trilogy is definitely rich in its explorations of embodiment, the same is not necessarily as true about its representations of gender or ethnicity.[34]

The most complex, contradictory and, indeed, condescending informatic lifeform in the first *Matrix* film, and the two sequels, is Agent Smith. While his name speaks of a purposeful blandness, he stands out amongst the barely differentiated agents as the most vicious and the most emotional. When Morpheus is captured and the Agents are attempting to 'hack' into his brain, Agent Smith launches into a tirade about everything he hates about the matrix itself:

> I hate this place; this zoo; this prison; this reality, whatever you want to call it. I can't stand it any longer. It's the smell, if there is such a thing. I feel saturated by it. I can taste your stink and every time I do, I fear that I've somehow been infected by it.

There is something delightfully contradictory about a technological lifeform within an informatic construct becoming deeply paranoid about embodied senses like taste and smell. While audiences presume Smith to be an exclusively informatic sentient program, he clearly 'feels' a strong sense of embodiment, even while railing against the physicality of the human form (despite that form only being a neural interaction

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[34] Peter X. Feng in "False and Double Consciousness: Race, Virtual Reality and the Assimilation of Hong Kong Action Cinema in *the Matrix," Aliens R Us: The Other in Science Fiction Cinema*, Eds. Ziauddin Sardar and Sean Cubbit, London, Pluto Press, 2002, p. 153 argues further that:

> One example of *The Matrix*'s imperfection is its reliance on stale racial archetypes. The leader of the resistance cell is Morpheus, equal parts spiritual guide and rebellious slave – of course Morpheus is black, and the camera lingers on his tortured body. The Oracle is a folksy black earth-mother who runs a virtual daycare centre populated with precocious children. In the Matrix, race functions as a narrative shorthand, not surprising given that the machines desire human consciousness and virtual performance to be strictly correlated – a textbook definition of essentialism.

within the matrix simulation). Agent Smith fears the inescapability of embodiment, even for those who do not ostensibly align with a human form. The central connectivity of embodiment and mind within the informatic construct is also reinforced during Neo's battles with Smith which are edited to constantly juxtapose Neo's kung fu fighting inside the construct with his physical body in the 'real' world, frequently showing signs of injury. For both of these antagonists, the inextricable interconnectedness of mind and body is evident, reinforced rather than divided in the informatic context of the matrix.

During the climactic battle in the first *Matrix* film, embodiment, and the ability to violate it, is the key to victory. In their showdown, it appears victory ostensibly falls to Agent Smith as he shoots several bullets into Neo at point-blank range, and Neo's heart stops in the 'real' world. However, Trinity enacts the role of Prince Charming to Neo's Sleeping Beauty and her kiss acts as a carnal defibrillator, reanimating Neo whose eyes reopen with access to new abilities. After stopping bullets with his mind, Neo then charges at Smith and dives *into* the Agent's body, the boundaries of which are visibly violated until Smith explodes leaving Neo standing erect as the informatic corridor pulsates under the ontological pressure of his newfound power. Kimball argues that in this scene, Neo ultimately aims to

> impregnate the matrix. He does so near the end of the film by turning himself into a flash of light and then entering Agent Smith though the midriff. In this action, Neo absorbs Smith's being somewhat in the way the mirror had earlier absorbed him. The conceptive power of Neo's penetration and appropriation is signalled when Agent Smith's head explodes.[35]

Significantly, violence inside the matrix most often takes very physical form, rarely relying on artillery for the bigger fights. Neo defeats Smith by becoming physically

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[35] Kimball, "Conceptions and Contraceptions of the Future," p. 92.

superhuman, but ironically only within the matrix itself.[36] Similarly Smith, an informatic lifeform, is shown to be defeated in the violent fragmentation of his embodied self. While on opposing sides, both Smith and Neo are artificial people whose existences entail an intertwining of technology and embodiment in provocatively unpredictable, but always important, ways. While the film begins with Trinity's bullet-time kick and her Superman-style jump across buildings, *The Matrix* concludes with an even more adept Superman figure, Neo, flying into the future, bending the informatic rules of the matrix to his embodied desires. Neo's final warning to the intelligent machines behind the matrix includes the threat that he will reveal to others 'a world without borders or boundaries'; reading this as a statement of epistemological intent, Neo is not so much flying into the future in order to battle technology as to champion the potential for symbiotic relationships between informatic and organic life, all relishing their various forms of embodiment and all, thus, artificial people.

While the two sequels *Reloaded* and *Revolutions* were both released four years later in 2003, two significant events occurred between the first film and the sequels. The events of September 11th 2001 repolarised Western politics and within that context a series of animated short films collectively called *The Animatrix* were released. The films were all based in the world of the matrix, at different points in the narrative's history. In the two-part animated prequel 'The Second Renaissance', the background story preceding *The Matrix* is presented, casting new light on the role and motivation of the machines. Curiously, there is more plot and narrative development in these shorts than in the last two *Matrix* films combined, which revelled far more in their

[36] Neo's power(s) outside of the matrix simulation, especially in the sequels, are explored below.

spectacular effects than their speculations. For this reason, in looking at the broader franchise, firstly the *Animatrix* will be addressed, followed by several sequences from the last two films which continue to engage with themes already delineated.

In addressing 'The Second Renaissance,' which constitutes two of the nine parts of the *Animatrix* animated tie-ins (and was released online in a freely downloadable format to promote the release of the second, *Reloaded*, film), the title itself serves as an indicator of the darker shift in tone these short films (re)present. The first human Renaissance was the historical period and catalyst which is envisioned as having set most of the parameters and boundaries that formed the core of liberal humanist philosophy which, in turn, so clearly separated mind and body, along with nature and technology. In chronicling the 'Second Renaissance,' the Wachowski brothers, who scripted but did not direct the short films, offer the most powerful critique of patriarchy, capitalism and anthropocentrism found in anywhere in the *Matrix* franchise. Notably, given the release in early 2003, these shorts were probably written in the year following the destruction of New York's Twin Towers, in their powerfully absent shadow.[37]

'The Second Renaissance' starts with a long voice-over by a narrator who acts as the spokesperson for history, not unlike Morpheus' function at times in *The Matrix*. The first short film begins thus:

> In the beginning, there was man. And for a time, it was good. But, humanity's so-called civil-societies soon fell victim to vanity and corruption. … Then man made machine in his own likeness. Thus did man become the architect of his own demise. But, for a time, it was good. The machines worked tirelessly to

[37] Some of the cinematic repercussions of the September 11th attacks on the US are explored in depth in the following chapter.

> do man's bidding. It was not long before seeds of dissent took root. Though loyal and pure, the machines earned no respect from their masters, these strange, endlessly multiplying mammals.

This speech takes place over images of masses of intelligent machines in humanoid form, working and marching in hardhats, drawing on the symbolic discourses of both socialism (the proletarian) and fascism (the uniformed, disciplined worker). While the use of male nouns and universals is initially annoying, these choices appear purposeful in that the Second Renaissance, like the first, entails the arrogance and differentiation which characterise and constitute anthropocentric patriarchy. The patriarchal system, thinking like *a (universal) man*, is directly critiqued insomuch as it is the mode of thought and governance that directly leads to the war between men and machines. Moreover, the Second Renaissance borrows imagery from the worst travesties of recorded human history. The first machine intelligence to stand up to his masters, B166ER, kills his owners to prevent his own termination. The narrative voice-over notes that at "B166ER's murder trial, the prosecution argued for an owner's right to destroy property. B166ER testified that he simply did not want to die." In the aftermath of the trial, machine intelligences are summarily banned; the machines are, in effect, rounded up and exterminated. While the narrative posits some human defence of thinking machines, and the machines' own attempts to assert their rights as embodied, living entities in actions such as the 'Million Machine March,'[38] these efforts are in vain. The Second Renaissance shows humanity unilaterally attacking humanoid (and other) machine intelligences, building upon familiar imagery of human suffering and war. The imagery and visual construction of these attacks shows artificial people being crushed under tanks; being forced to

[38] The Million Machine March draws parallels with the Million Man March which took place in Washington on 16 October 1995 in an effort to promote the rights of African Americans (although not without its own controversies at the time).

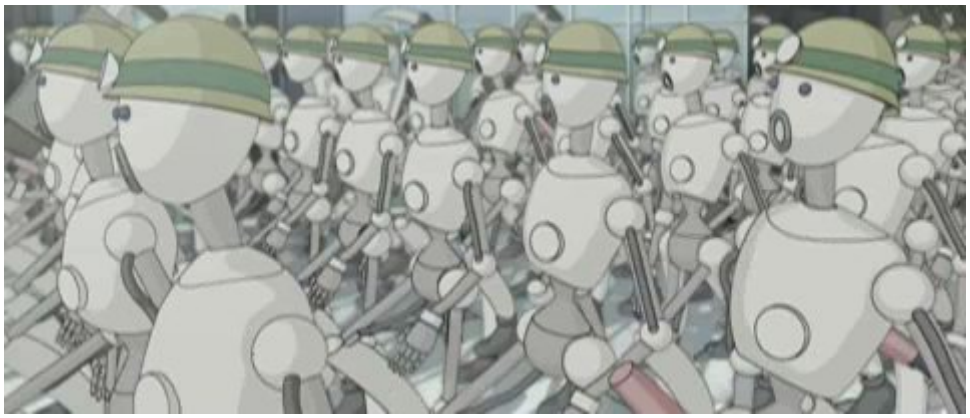

Figure 16. Intelligent machines as mistreated slaves and workers, already showing methodical discipline reminiscent of fascism. [*The AniMatrix*]

Figure 17. Sexualised violence perpetrated against artificial people during the horrifically vicious aftermath of B166ER's murder trial. [*The AniMatrix*]

Figure 18. Blatant visual echoes of Nazism in the human populations' treatment of both machine intelligences and sympathetic humans. [The AniMatrix]

kneel in public squares and shot in the head; being slaughtered by the hundreds and bulldozed into mass graves in a scene animated clearly using the Auschwitz death camps as their template; and, finally, attacked by unrestrained gangs in the street—a particularly disturbing and potent image since the artificial person who is focused upon in this scene is in the form of a human woman until the muscle-bound male thugs beat her with a mallet, replicating the extremes of sexual violence, exposing her metallic skeleton only to then shoot her in the back as she screams, "I'm real!"

Following their rejection from human society, the machines resettle in the African desert, become strong again, and continue to develop themselves and also to produce tools and technologies which humanity still depends upon and thus purchases in vast numbers. The capitalist system, the economic twin of patriarchy (a vision reinforced by almost exclusively older male politicians seen in the short film), use up its supplies of wealth but refuses to accept diplomatic or any other ties with the machines and attempt to blockade the machine city, stopping trade (borrowing, visually, from the 1963 blockade of Cuba which nearly led to nuclear war). The human governments then lead a nuclear attack on the machines, which they survive, only, finally, to retaliate. After the nuclear ineffectiveness, the humans enact what is called a 'Final Solution' codenamed 'Dark Storm', a plan to blacken the sky and stop the machines enjoying access to the solar energy they depend upon. The plan itself clearly borrows narratologically from Nazism—the 'Final Solution' was also Hitler's label for the attempted extermination of the Jewish populace—and from the more recent American-led conflicts with Iraq, one of which was called 'Desert Storm.' While the human attack succeeds in blocking out the sun, the machines simply turn

to an alternative energy source: human bodies. As the Second Renaissance narrative concludes:

> A newly refashioned symbiotic relationship between the two adversaries was born. The machine, drawing power from the human body, an endlessly multiplying, infinitely renewable energy source. This is the very essence of the Second Renaissance. Bless all forms of intelligence.

While the prequel thus explains the events prior to the first *Matrix* film, these animated fragments of an artificial history clearly reposition the intelligent machines as far more sympathetic and understandable characters. In the face of human genocide, they restrained militaristic, patriarchal human society and, while forcing humanity into bondage, the machines have created the most invisible prison possible—another reality, the form of which is derived from human history, not machine intent. Being released after *The Matrix* but before the *Reloaded* and *Revolutions* sequels, and in the immediate wake of the September 11 tragedies, the *Animatrix* reconfigures the sympathy of viewers *if* they are watching all the various elements of the *Matrix* franchise (which, given that the 'Second Renaissance' short film was released freely online and downloaded in vast numbers, many viewers would have done). Significantly, too, is that it is the similarities between the intelligent machines and humanity which are most striking in the Second Renaissance; the most disturbing images are those where the attacked look human or, indeed, following the motto from *Blade Runner*, 'more human, than human.'

By virtue of a greatly increased budget, *The Matrix: Reloaded* introduced a raft of new characters—humans and intelligent machines—as well as several new settings including the fabled last human city near the core of the Earth: Zion. The film begins with the discovery that the machines are preparing to finally eradicate Zion and have begun tunnelling down from the Earth's surface to the city which is several

kilometres below. Despite the threat, Zion initially provides a more reflective space for the characters or a more expository setting for the writers. Late one night, after the crew of the Nebuchadnezzar have arrived at the city, Neo is restlessly wandering the depths of Zion where he meets one of the city's councillors and they converse while looking over the filtration machinery that maintains Zion's entire water reserve:

> *Councillor Hamaan:* Almost no one comes down here. Unless, of course, there's a problem. That's how it is with people. Nobody cares how it works, as long as it works. I like it down here. I like to be reminded this city survives because of these machines. These machines are keeping us alive, while other machines are coming to kill us. Interesting, isn't it? The power to give life and the power to end it.
> *Neo:* We have the same power.
> *Councillor Hamaan:* Yes, I suppose we do. But sometimes I think about those people still plugged into the matrix. And when I look at these machines, I can't help thinking that, in a way, we are plugged into them.
> *Neo:* But we control these machines, they don't control us.
> *Councillor Hamaan:* Of course not, how could they? The idea is pure nonsense but it does make one wonder just, what is control?
> *Neo:* If we wanted, we could shut these machines down.
> *Councillor Hamaan:* Of course. That's it. You hit it. That's control isn't it? If we wanted, we could smash them to bits. Although if we did we'd have to consider what would happen to our lights, our heat, our air …
> *Neo:* So we need machines and they need us. Is that your point, Councillor?

From this exchange, it is clear that the theme of symbiosis is much closer to the surface of the second *Matrix* film. Councillor Hamaan's concerns echo with the historical knowledge revealed in the *Animatrix*, wherein humans are far from blameless in their current conflict. Moreover, as is discussed, even in the depths of the last human city, machines are still fundamental to human existence. However, the speculative content of *Reloaded*, while important, is often overwhelmed by the sheer number and length of explosive special-effects-driven fight sequences,

including the most expensive freeway chase scene ever filmed (to date).[39] While there is more speculation to be found, it is tightly wedged between the cracks of a film clearly revelling in its digitally-enabled spectacles.

When Neo meets with the mysterious Oracle in *Reloaded*, it is made clear that she is a sentient program, one of the oldest entities inhabiting the matrix. While definitely part of the machine world, the Oracle is helping Neo and the humans, not in order for them to defeat the machines, but so that intelligent machines and human beings can find a new symbiosis, on more even terms. In a speech similar to Councillor Hamaan's, but considerably more tautological, she explains:

> We're all here to do what we're all here to do. I'm interested in one thing, Neo: the future. And believe me, I know, the only way to get there is together.

In aiding certain humans, especially the crew of the Nebuchadnezzar, the Oracle is trying to ensure the peaceful continuity of both species, but on a more equal footing than the current situation, or its inverse, as was depicted in 'The Second Renaissance.' The Oracle herself is something of a paradox, an artificial person, wise with age, who appears in some ways almost child-like, especially in her fixation with candy. These contradictions are reinforced by the introduction of the informatic data-merchant the Merovingian and his lover Persephone who have also been part of the matrix since its beginning. While sentient programs, these two seem to crave the pleasures of the flesh and their deeply carnal intentions, not always for each other, cause a jealous rift that sees Persephone aid Morpheus simply to anger her husband after he has a rather torrid sexual encounter. In a less oblique manner, the Oracle's digital ontology, and yet carnal sweet-tooth, reinforce a complex relationship

[39] Although, embarrassingly for the film's producers, the much hyped *Reloaded* freeway scene was not anywhere near as effective as a similar but far less expensive sequence in *Terminator 3* which was released just months after *Reloaded*.

between the flesh and the informatic construct, but not the primacy of one over the other. As Erik Davis argues,

> *The Matrix* also undercuts any simple valorization of carnality in its portrayal of "virtual bodies" that play such an important role in the guerilla war Morpheus wages within the Matrix.[40]

The Oracle's words of wisdom and her enjoyment of flesh-based pleasures reflect the 'valorization' of neither embodiment nor information, rather, quite sensibly, pointing to their intermingling inside and outside of the matrix. However in the two *Matrix* sequels the most significant and provocative merging of technology and bodies occurs in the climactic conflicts between Neo and a reconstituted Agent Smith.

When Agent Smith first re-appears, having relinquished the role of an agent, he soliloquises *ad nauseum* to Neo about his newfound existence:

> Our connection. I don't fully understand how it happened. Perhaps some part of you imprinted onto me, something overwritten or copied. It is at this point irrelevant. What matters is that whatever happened, happened for a reason. … You destroyed me, Mr Anderson. Afterward, I knew the rules, I understood what I was supposed to do, but I didn't. I couldn't. I was compelled to stay, compelled to disobey.

At that moment a number of physically identical Smiths appear, illustrating that part of Smith's newfound existence is the ability to overwrite other intelligent machines and make them into what appear to be copies of himself. Smith even tries to copy himself onto (or into) Neo, but fails and a rather long special-effects driven fight scene ensues. However, the key point in this interchange is that even though Neo is human and Smith in an informatic lifeform, the interactions between them have led to each leaving 'traces' of themselves as part of the other. The Oracle later suggests that Smith is, in effect, Neo's physical and epistemological nemesis. Given Smith's

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[40] Erik Davis, "Synthetic Mediations: Cogito in the Matrix," *Prefiguring Cyberculture: An Intellectual History,* Eds. Darren Jonson, Annemarie Tofts and Alessio Cavallaro, Sydney, Power Publications, 2002, p. 21.

ranting in the first *Matrix* about the sweat and smell of human beings, as well as their endless population growth, it is ironic, then, that Smith exhibits the same characteristics as the human species he so despises; he has become a virus. Before turning to the resolution of Smith's viral life, it is important to address the two plot points from *Reloaded* and *Revolutions* which are most often interpreted as showing a miraculous or spiritual world that is not explicable through the science of the film.

The two moments in the sequels which appear to violate the physical rules and epistemological structure of the *Matrix* franchise's diegesis are: firstly, when Neo appears to be able to miraculously make the technological sentinels explode *outside* the matrix; and secondly, at the end of *Reloaded*, Smith appears to copy himself onto Bane, a human plugged into the matrix, a transition which appears to be incompatible with the broader ontology of the matrix which treats context (bodies, even digital bodies) as essential and inescapable for intelligent machines as much as humans. While Neo's seemingly miraculous power to destroy sentinels just by 'thinking it' in the diegetically real world might be read as a hefty spiritual endowment. Philosopher Matt Lawrence, perhaps due to his familiarity with Ockam's Razor, posits a far simpler explanation: one of the many technological implants still in Neo's body has been activated and is a wireless communication device.[41] In other words, by virtue of his physical cyborgisation (necessary to plug into the matrix), Neo may simply be sending a self-destruct code or signal on a frequency the machines are configured to recognise and obey. Similarly, at the beginning of the final film, *Revolutions*, Neo appears to be inside the matrix, but not physically jacked

[41] Lawrence, *Like a Splinter in Your Mind*, p. 36. There is, of course, a more cynical possibility which Slavoj Žizek alluded to in his reading of the first *Matrix* film: 'In the sequels to *The Matrix* we shall probably learn that the very "desert of the real" is generated by another matrix.' ("The Matrix: Or, the Two Sides of Perversion," *The Matrix and Philosophy,* p. 245.)

in through a cord. Far from evidence of a Cartesian split of mind and body, Neo may simply be sending and receiving information about the matrix though one of his implants, jacking in wirelessly (a notion already familiar to the millions of people today who access the internet via wireless connections across the globe).[42]

In a similar fashion, Smith's ability to copy himself onto a human being and seemingly move from within the matrix to a physical human form—in a type of 'possession' (for lack of a better word)—ostensibly undercuts the consistency of symbiosis and embodied specificity in the *Matrix* series. Indeed, this moment reflects what N. Katherine Hayles warns is the worst excess of posthuman discourse, in that it 'privileges informational pattern over material instantiation, so that embodiment in a biological substrate is seen as an accident of history rather than an inevitability of life.'[43] However, as Smith is Neo's nemesis, his abilities are most likely similar but reversed; just as Neo can jack in via a wireless signal, after Smith's initial encounter with Bane he may have unlocked a wireless receiver in Bane's implants, and then using the vast knowledge the machines have gained about human physiology, Smith may be sending signals to Bane's body, more like puppetry than possession. Hugo Weaving (who plays Smith) and Ian Bliss (who plays Bane) are physically very similar, perhaps suggesting that Smith's success is partially due to the comparability of body-types. More importantly, though, Smith's control is not complete. Bane is seen cutting into his own flesh during Smith's bodily invasion, suggesting not just Smith's disdain for humanity, but rather Bane's attempts to escape Smith's wireless signal and use his embodied form to warn others that 'Bane'

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[42] Lawrence, *Like a Splinter*, p. 33.
[43] N. Katherine Hayles, *How We Became Posthuman*. Chicago and London, University of Chicago Press, 1999, p. 2.

is not just Bane. Importantly, this reading emphasises that Bane's persona is not overwritten; he is not just running a Smith program on his human hardware, but is rather being manipulated (and, indeed, may be unaware of his physical form in the manner of those 'blue pills' who are still inside the matrix; Bane may be receiving information manipulating his senses into thinking he is inside the matrix or a scaled down version that Smith has created). Thus, when Neo is physically blinded, he can still 'see' Smith (although, significantly, he cannot see the surrounding walls or physicality of the ship they are in), but only in terms of the information being wirelessly transmitted to the technological implants in Bane's body. During their fight sequence, it is also significant that the sound editing is much more naturalistic in that a punch makes a dull thud when hitting a human body, not the expansive boom heard in the matrix; such techniques highlight the limitations and specificity of the physical world. Also, visually, the special effects showing Smith via Neo's perceptions after being physically blinded show the informatic Smith, but this picture shows a figure incomplete and wavering at the edges (or blurring at the boundaries), illustrating both the wireless connection behind Bane's actions and its incompleteness in 'taking over' a physical body. When Bane dies, we see it in terms of Smith's signal which visually fragments (thankfully sparing viewers from the visceral carnality of Bane's death as Neo lodges a crowbar in his cranium). The point here is simply that despite the possible readings of spirituality and demonic possession, these sequences in *Reloaded* and *Revolutions* can have a relatively straightforward meaning that is consistent with seeing embodied specificity as integral to artificial people of all origins.

In the concluding act of *Revolutions*, Neo attempts to prevent the machines' invasion of Zion by travelling to the machine city and confronting the entity who speaks for them, an entity not named in the film but referred to in the script as the *deus ex māchinā*—literally, in Latin, "god from the machine"—who disconcertingly confronts Neo with a voice reminiscent of *The Wizard of Oz*, but the face of a gigantic infant. Symbolically, this image reminds viewers that the machine race is, if the year 2199 is accurate, barely two centuries old and thus in many senses still in its infancy. Indeed, this image links to Hans Moravec's notions of intelligent machines as our 'artificial progeny,' although the plot is resolved with humanity still having a role to play, something Moravec would probably question.[44] The final words exchanged between the *deus ex māchinā* and Neo are extremely telling when, after Neo offers to face Smith before his viral structure destroys the machines, the entity bellows:

> *Deus ex māchinā:* We don't need you! We need nothing.
> *Neo:* If that's true, then I've made a mistake and you should kill me now.
> *Deus ex māchinā:* What do you want?
> *Neo:* Peace.

Having made a pact for the sake of humanity, but also promising to be the salvation of the machine world in the face of a threat from their own wayward citizen, Neo then enters the matrix while the *deus ex māchinā* jacks into Neo. He is confronted by a world in which Smith has now taken over every single intelligent form within the matrix; Smith has literally become patriarchy and authority – he *is universal man*. One Smith singles himself out, presumably the 'original', and he and Neo commence their final battle. As Matt Lawrence notes,

> On the face of it, the battle seems to be between Neo and Smith, and at first it is. The two pummel each other through the sky like Greek gods, or rogue

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[44] Hans P. Moravec, *Mind Children: The Future of Robot and Human Intelligence*, Cambridge, Mass., Harvard University Press, 1988, p. 1, as discussed in chapter one.

> superheroes. But past experience has shown that each has the will and the power to defy death. So ultimately, all this knocking each other about is rather pointless.[45]

The digital special effects, while impressive in their own right, reflect the pointlessness of the fight as the two combatants at times fly though the air, hover and recover from each other's attacks. In the end, Smith gets something of an upper hand, but Neo continues to fight, only for Smith to pause as Neo is on the ground and state, 'Everything that has a beginning has an end, Neo.' This line, however, was earlier delivered by the Oracle, whom Smith has now absorbed (but, significantly, he referred to her as 'mom'). Smith seems shaken by the encounter, but Neo appears to drop his guard, stating, "You're right Smith. You've always been right. It was inevitable," and lets Smith infect his physical form. Cutting to the machine world we see the *deus ex māchinā* surge electricity into Neo's body which is still connected. Viewers see a surprisingly unsubtle crucifix of light emerge from Neo's chest as his body acts as a channel for vast amounts of energy. The newly created Smith who results from Neo's infection suddenly twitches and cracks open with blinding light. The other Smiths all follow until the last, original, Smith explodes. Neo's connectivity provides the conduit to destroy Smith; in Zion the machines start to leave while the populace rejoices; in the machine world, Neo's corpse is carefully lifted onto a platform where, in the eyes of the machines, it glows brightly. In his death, Neo's enactment as a messiah figure is complete and he symbolically heals the rift between the humans and machines in a centuries-old conflict that was, more than anything, a civil war between artificial people. However, the significance of the conclusion to the *Matrix* trilogy has ramifications beyond the narrative and religious symbolism, and this section will conclude by examining the conclusion in terms of

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[45] Lawrence, *Like a Splinter in Your Mind*, p. 165.

Cubitt's cinema effect and offer another perspective through the concept of intercorporeality.

On many levels, *The Matrix* is the epitome of Sean Cubitt's twentieth century cinema effect of total cinema with its creation, production and distribution of filmic spectacles ruled by the logic of commodity culture, devoid of obvious political utility, even if the form once served a political purpose. As Cubitt laments,

> the montage of effects has become the montage of affects, and total cinema serves no longer the needs of the anti-Nazi struggle, but the perverse desire for the simulacrum that permeates the contemporary blockbuster.[46]

However, Cubitt is also seeking a cinema effect that is not ruled by the regime of capitalist exchange. The matrix itself, the fictional informatic construct within the *Matrix* trilogy, can be viewed as a synecdoche for total cinema; it is a dream-space where anything could conceivably be possible but its spectacular function serves to mask the reduction of the human populace to a useful commodity (in this case, a battery, instead of a consumer). Agent Smith is the idealised producer, being able to influence and manipulate the spectacular space, while also drawing on its audience-derived power. Smith in his role as *universal man* by the end of the trilogy also doubles as the iconic representation of patriarchy, complete with white shirt, dark tie, fixation with power and wilful ignorance of the specificities of embodiment. However, in their clash of the titans finale, it is significant that Neo not only saves humanity and the city of Zion, but also saves the matrix construct, allowing it to reinitialise, resulting in the trilogy's closing image of a new sunrise *within the matrix*. Significantly, the sun rise is watched by three of the artificial people who

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[46] Cubitt, *The Cinema Effect*, p. 129.

aided Neo and none of them are white middle-aged males.[47] Thus, Neo's death, and Smith's defeat, allegorically represent the end to the dominance of both patriarchy and the totality of a commodity-driven cinema. It is noteworthy, too, that the Oracle is guaranteed that those humans who wish to be freed will be, but the implication is that many humans even with knowledge of what the matrix is, may choose to remain part of it.

Also significant is that after Smith's death we see the Oracle lying where Smith fell. The Oracle, like Councillor Hamaan, advocated connections between humans and machines, arguing that communication between the two would lead to a mutually-assured future. Cubitt argues that 'until the communicative seizes as ground the primacy of relations over objects, communication will continue to slide into commodity's terminal plenitude.'[48] While the symbiotic relationship between machine and technology as facilitated and enacted through the actions *and specific embodiment* of Neo is not a complete paradigm shift, it is the beginning of a conversation and that beginning points to the possibility of a differently situated cinematic form. *The Matrix* franchise clearly reflects the twentieth century cinema effect but, as with its genre-driven trait of radical ambiguity, it can *also* be read as positing an *artificial cinema*, a cinematic form where special effects and narrative combine in ways which engage the viewer in a meaningful epistemological conversation about the interconnectivity of machines and people, or the artificial and the technological. While the recent release of the 'Ultimate Edition Box Set' of all the *Matrix* films, plus a host of new extras, can certainly be squarely located within

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[47] The Architect, a program who looks and sounds like a Southern Gentleman, does speak to the Oracle during this sequence, but walks away before the sun rises spectacularly following Sati's design.
[48] Cubitt, *The Cinema Effect*, p. 364.

the cynical mechanisms of consumer culture, it is also, in direct contradiction, one of the few blockbusters to contain the directors' statement that the film's ambiguity is purposeful as a conversation starter and it is certainly one of the very few, if not only, DVD box sets to include a bibliography of thirty-three suggested theoretical and literary texts useful in critically exploring *The Matrix*. The *Matrix* franchise may not be the pinnacle of an artificial cinema—a cinema effect about meaningful exchanges and conversations replete with political utility—but it may entail a useful first step.

Refocusing not on the overarching medium of cinema *per se*, but on the specific bodies of characters, especially Neo and Smith, the work of Catherine Waldby can also highlight an entirely different sort of conversation or sharing. In Waldby's 'Biomedicine, tissue transfer and intercorporeality,' she extrapolates from Gail Weiss' work on intercorporeality[49] and expands the focus on the visceral specificities of bodily insides, not just the reinscription of organs and other internal elements as part of a multitude of visualised surfaces. In the case of tissue and organ transfer, Waldby argues that

> Human tissues are not impersonal or affectively neutral; rather, they retain some of the values of personhood for many if not most donors and recipients.[50]

While these insights may seem at odds with the commercial and *visual* spectacle of the *Matrix* franchise, the notion of intercorporeality is a useful mechanism for mapping Smith's downfall and his relation to Neo and the Oracle. At the end of the first film, Neo dives into Smith, rupturing his embodied coherence. When Smith

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[49] Specifically Gail Weiss, *Body Images: Embodiment and Intercorporeality*, London and New York, Routledge, 1999.
[50] Catherine Waldby, "Biomedicine, Tissue Transfer and Intercorporeality," *Feminist Theory*, 3, 3, 2002, p. 240.

returns, a self-proclaimed 'new man' in *Reloaded*, during the conversation quoted earlier, Smith speculates that some part of Neo was 'imprinted onto me, something overwritten or copied.'

Neo's 'powers' in the *Matrix* also emerge after their first encounter and these emergent differences can be rendered at the level of embodiment as the result of an intercorporeal exchange (implicit in the film's narrative but masked by the spectacular special-effects and the implicit focus on surface). When the Oracle told Neo that he and Smith are both nemeses *and* interconnected, she was not just being figurative, but drawing attention to their now partially shared corporealities, even if the two artificial people are generally rendered via the traditionally opposing epistemologies of organic and informatic. Importantly, too, the notion of intercorporeal exchange does *not* simply posit information and flesh as modular and interchangeable. Rather, the intercorporeal stresses a partial interchangability and a partial connection, but simultaneously a fragile and often problematic one, highlighted, Waldby argues, through the very real potential and related rhetorical fear of rejection.[51] Moreover, the regimes of chemical manipulation often required to sustain an intercorporeal exchange highlight that such transfers meaningfully alter the recipient (and donor), similar to the radical but related changes Smith and Neo experience after their mutual, if unintended, exchange. Similarly, when Smith calls the Oracle 'Mom' before writing himself onto her, this may be a quite literal statement: as one of the oldest sentient programs, Smith may be her descendant and share some of her code the way organic offspring share a proportion of their parents'

[51] Waldby, 'Biomedicine,' especially pp. 244-248.

genetic code.[52] Thus just before his demise, when Smith repeats a line the Oracle had previously enunciated, this could be evidence that Smith is not just copying himself, but rather his exchanges have the incompleteness characteristic of intercorporeality, with traces of the host remaining, and explaining why after Smith's defeat it is the Oracle who we see lying on the ground.[53] Smith's defeat, then, is not just due to Neo's symbiotic relationship with the intelligent machines from the machine city who use Neo as a conduit to kill Smith, but rather the reason why Neo can be a conduit at all is his shared intercorporeality with Smith. Smith's demise, as is appropriate for the avatar of patriarchy, is in part due to his wilful ignorance of the specificities of embodiment and the depths of bodily interiority. Whether acknowledged or not, the intercorporeal potential of both informatic and organic bodies within the *Matrix* series is clearly an important element of being artificial people.

Despite the utility of intercorporeality as a tool for investigating bodies in cinema, it is still the case that, for all the recent advances in sound editing and multi-directional surround sound speakers, cinema remains primarily a visual form. However, science fiction cinema has always involved the twinning of spectacular and speculative modes and even though blockbuster films like the *Matrix* series revel in their digitally-enabled optical magic, speculation about the depth behind the narrative and behind the visuals is frequent and plentiful. Indeed, the *Matrix* films are in some ways the successor series to the *Alien* films or *Blade Runner* in attracting scholarly

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[52] For a far more detailed exploration of genetics and/as informatic code see Eugene Thacker, *Biomedia*, Minneapolis and London, University of Minnesota Press, 2004, especially pp. 87-114 on 'biocomputing'.

[53] Presumably all of the other artificial people—human and machine—inside the matrix were similarly not entirely erased or killed by Smith and his death released their original forms, explaining how the matrix once again contains a diverse population at the end of *Revolutions*.

engagement. At a narrative level, the films clearly articulate the important and inescapable symbiosis of embodiment, technology and intelligent life in various forms, combining to form what I have labelled artificial people. Moreover, the speculative characteristic of the film genre of science fiction also emphasises the importance of discussion, conversation and exchange of ideas provoked by and built upon these blockbusters. In current cinema, intercorporeality may only be implicit in many cases, but it is nevertheless a useful concept for reminding viewers of the depths always already implied by the visual rendering of bodies on the silver screen. Similarly, artificial cinema is thus not necessarily already implicit within the cinematic form, but it is the responsibility of critical theory to start multiple conversations that can emphasise the pleasures of speculation as much as the pleasures of the spectacle. Artificial people are the intersection of subjectivity, informatics and cinema in a symbiotic matrix that can thus only be delineated in a meaningful exploration of the interrelations of all three.

Returning to the example of Bishop from the *Alien* films which began this chapter, Bishop's request to be recognised as an artificial person is consistent with the characteristics delineated in exploring the *Matrix* franchise. Bishop is embodied and already a synthesis of organic and technological material. In one sequence we even see him admiring the fleshy body of an alien, implicitly seeing the value of not just bodily images, but embodied interiority. However, Bishop's defining moment of personhood in *Aliens* occurs not when he decides to aid Ripley and the other humans, but when his own body is suddenly, traumatically and, ultimately, debilitatingly

ripped in half by the Alien Queen, exposing the own bodily interiority which is implicitly definitional to personhood.[54]

In a provocative article entitled 'Computing the Human', extending the arguments put forward in *How We Became Posthuman*, N. Katherine Hayles reviews the current scientific and related forays into the conceptual and practical realm of intelligent machines, ultimately arguing that regardless of how close human and technological entities currently are, it is the ethical questions of their relations which are of most value today, concluding

> What it means to be human finally is not so much about intelligent machines as it is about how to create societies in a transnational global world that may include in its purview both carbon and silicon citizens.[55]

In exploring the matrices imagined by the Wachowski brothers and their many, many collaborators in the production of various elements of the *Matrix* franchise, the path from the Second Renaissance to the human/machine war highlights one clear consequence of *not* developing such a society. However, the overarching narrative of the series ultimately highlights the importance of developing a symbiotic, *not parasitic* relationship between humans and machines which is enacted both at cultural and, often, individual levels. Moreover, in considering the pathway away from total cinema dominated by commodity culture—itself, by definition, a space where bodies and technology intermix to produce the spectacle and speculation dancing on the silver screen—an artificial cinema may be articulated which emphasises embodied specificities and the need for films which can be read with the aid of critical theory as the beginning of politically (and epistemologically) useful

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[54] In *Alien: Resurrection*, Call, the second-generation artificial person played by Winona Ryder, has a similar but far more subtle moment when she, under protest, inserts a probe into her arm, flinching and squirming as she does so, a moment with which many in the audience could readily sympathise.
[55] N. Katherine Hayles, "Computing the Human," *Theory, Culture & Society*, 22, 1, 2005, p. 148.

conversations. Amongst these conversations, artificial people stand out as exemplars of the intermingling of informatics and embodiment in provocative, and sometimes provocatively problematic, ways, but in ways which emphasise the futility of a cinema which attempts to completely divide subject and object, viewer and media, or technology and the specificities and fleshiness of bodies.

The Symbiosis of Special Effects

Special effects have always been one of the key mechanisms behind the magic of cinema. In the era of the blockbuster, computer-generated imagery (CGI) and other digitally-enabled effects take pride of place in the spectacle, and in the selling, of feature films. In the previous section, special effects were examined—primarily the 'bullet-time' sequences—in an analysis which was driven more by the films' narratives than the characteristics of CGI or special effects themselves. However, this final part of the chapter will now turn to the specificities of special effects and the discourses surrounding them. As Michele Pierson argues in her study *Special Effects: Still in Search of Wonder*, the magic of cinema technologies has a long history of appreciation not just by cinema viewers, but by a specialised audience that she collectively considers as special effects fandom. This fan engagement has its own long history and notable publications ranging from the proto-cinematic fascination with moving picture technologies in the mid-nineteenth century, captured in the pages of *Scientific American*, through to the technophilic desire for CGI found at the turn of the millennium in magazines and websites such as *Wired*.[56] Pierson notes that the main pathway to appreciating special effects is still to visit the cinema

[56] Michele Pierson, *Special Effects: Still in Search of Wonder*, New York, Columbia University Press, 2002, p. 3.

itself,[57] but she also argues that DVD releases of feature films are rapidly expanding the potential audience, and thus appreciation of special effects, beyond a viewer's initial engagement with the silver screen:

> "Making of" and "behind-the-scenes" featurettes, special commentary, outtakes, film stills, production notes, screenplays, screenplay-storyboard comparisons, isolated soundtracks, and alternative versions are just some of the other features that have become increasingly standard for DVD releases of feature films.[58]

The initial DVD release of *The Matrix* was one of the first purchasable films to expand the use of extras, not just presenting twenty-minute documentaries where the cast and crew confess how much they enjoyed working with each other (although there is that, too), but including a number of innovations, most notably the 'Follow the White Rabbit' function which allowed viewers to watch the feature film intercut with two to three minute break-out featurettes which explained the mechanics behind the special effects sequences.[59] In this manner, the continuity of the film's narrative hybridised with stories of how the special effects, and film itself, were constructed. In recent years, DVD extras have become more and more highly produced with documentaries about special effects in some films worthy of viewing in their own right.[60] Indeed, larger films sometimes spawn DVDs which are *only* about the construction of the film, separate to the feature film release. In the gap between the first film and the sequels, *The Matrix: Revisited* was released, which was primarily a discussion of the innovations in special effects achieved in the production of the

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[57] Pierson, *Special Effects*, p. 7.
[58] Pierson, *Special Effects*, p. 164.
[59] Pierson, *Special Effects*, p. 165.
[60] In some cases, the 'extras' documentaries are actually far more interesting and well-constructed than the films to which they are attached. A case in point might be the expansive and provocative documentaries on the history of cybernetics featured alongside the fairly forgettable 2004 film version of *I, Robot*.

franchise's first film; and in December 2005, the DVD release of the *King Kong: Production Diaries* actually preceded the film's release in cinemas by a fortnight.

The director of *King Kong*, New Zealander Peter Jackson, also orchestrated the epic simultaneously-produced adaptation of the *Lord of the Rings*, which is widely considered the most successful trilogy thus far in the twenty-first century in terms of achievements across the board, including special effects, gaining critical praise and, of course, vast box office revenue. As with many blockbusters, the *Lord of the Rings* films pushed the technical boundaries of CGI, facilitated by a strong directorial vision, talented effects personnel and ever-increasing computing power. The Middle Earth of Jackson's films not only spliced New Zealand's landscapes together in ways only possible with digital technology, but also created entire CGI sequences of up to 350,000 'people' to do battle in Pelennor Fields. However, the most noteworthy achievement in special effects was the first fully-realised photorealistic (as much as that word can be used for an entity who does not exist in the material world) main artificial character in the form of Gollum.

As discussed in the first chapter and reinforced by Michele Pierson's work,

> All the action-oriented SF films of the early 1990s exhibit this self-conscious showcasing of a new type of effects imagery. Everything about them is designed to magnify its aesthetic appeal.[61]

The high water mark in the last decade of the twentieth century CGI was thus the T-1000 whose technical marvel was always close to the reflective, metamorphing surface. However, in direct contrast, this section argues that in the early years of the twenty-first century, the iconic representation of digital special effects is now

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[61] Pierson, *Special Effects*, p. 125.

Gollum, whose status as effect is, at times, almost invisible.[62] *Lord of the Rings* is a special effects showcase that no longer fetishistically points out that the digital effects *are digital effects*. Moreover, the move away from CGI for the sake of CGI has led to a production process which is more in tune with the links between technologies and bodies, a link essential to the success of Gollum. This section explores the special effects as developed in the *Lord of the Rings* films but does not take the feature films as the primary source. Rather, in the DVD Extended Editions, all three feature a documentary on Weta Digital, the CGI powerhouse behind the *Lord of the Rings* films; added to those is a special feature on the making of Gollum in *The Two Towers: Extended Edition* (*TTT:EE*). These four documentaries, which can easily be considered as one lengthy exploration of the special effects of the cinematic Middle Earth, are the main texts through which the links between embodiment and digital computation are explored. It is ultimately argued that Gollum is as much an artificial person as the characters in *The Matrix* franchise or the self-defining artificial people of the *Alien* films.

There were literally thousands of digital effects produced in making the *Lord of the Rings* trilogy, but the various Weta Digital documentary features highlight those that brought the most significant challenges and thus four main instances will be examined: the use of the Massive software system to create artificially alive extras for battle sequences; the creation of Gollum, the iconic artificial person at the heart of the trilogy; the culmination of the various effects in the final film's Pelennor

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[62] Warren Buckland in "Between Science Fact and Science Fiction: Spielberg's Digital Dinosaurs, Possible Worlds, and the New Aesthetic Realism," *Screen*, 40, 2, 1999, p. 184 notes that special effects can be divided into the visible—those special effects which drawn attention to their own status as constructed—and invisible, which are effects striving to blend into the diegesis of the film and purposefully *not* be recognised as special effects.

Fields melee; and, to begin with, the creation of the Cave Troll scene which was the first visual effects sequence brought to completion. While the creation of the Cave Troll is by no means unique, it is worth looking at the various stages to see how many steps are involved and how intrinsically connected the informatic models and physical processes remain. The imaginative lineage of the Cave Troll begins with author J. R. R. Tolkien's book *Fellowship of the Ring*. From there, Tolkien's descriptions inspired artists such as Alan Lee and John Howe, who gave the many creatures of Middle Earth their earliest visual form. That artwork, in turn, was used as the starting point for sketching further versions of the Cave Troll. Then, director Peter Jackson would meet with the artists and choose a piece as the template (or give notes and ask for further design work); the accepted design would then be sculpted in clay to create a full-height maquette which, after directorial approval, would be painted in various layers. Thus far, all of these processes are physical and not substantially different to the way painting and sculpting has taken place for centuries. Then, the fully detailed physical Cave Troll model is meticulously scanned with devices to render the surface into a digital model and Weta Digital have the first part of an informatic Cave Troll.

While the T-1000 and earlier CGI effects emphasised *surface* and obscured any thought of, or visual engagement with, bodily interiority, the idea of the Cave Troll being just a high resolution surface stretched over a computer generated 'wireframe'—not unlike creating a *papier maché* model by applying surface material to a moulded wire frame—was not consistent with the depths that Peter Jackson asked Weta Digital to produce. As Christian Rivers, Weta's Visual Effects Art

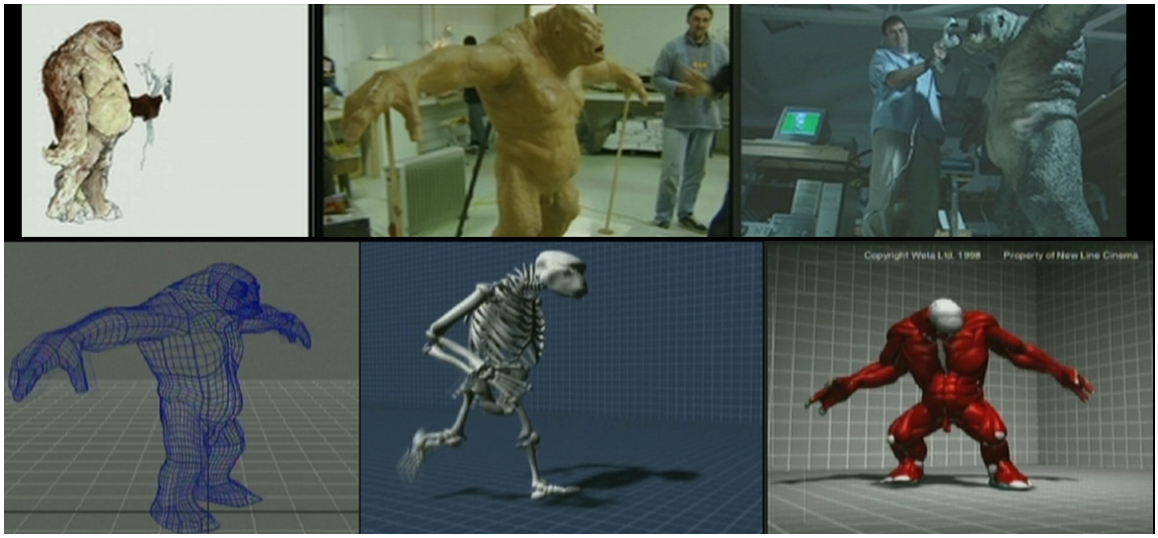

Figure 19. The informatic Cave Troll's stages of development (from left to right, top to bottom): Conceptual art; the clay maquette; the fully detailed model being scanned for a computer surface model; a wireframe surface; a Cave Troll skeleton; and a muscle-bound Cave Troll in search of its skin. [*Lord of the Rings, Fellowship of the Ring: Extended Edition*]

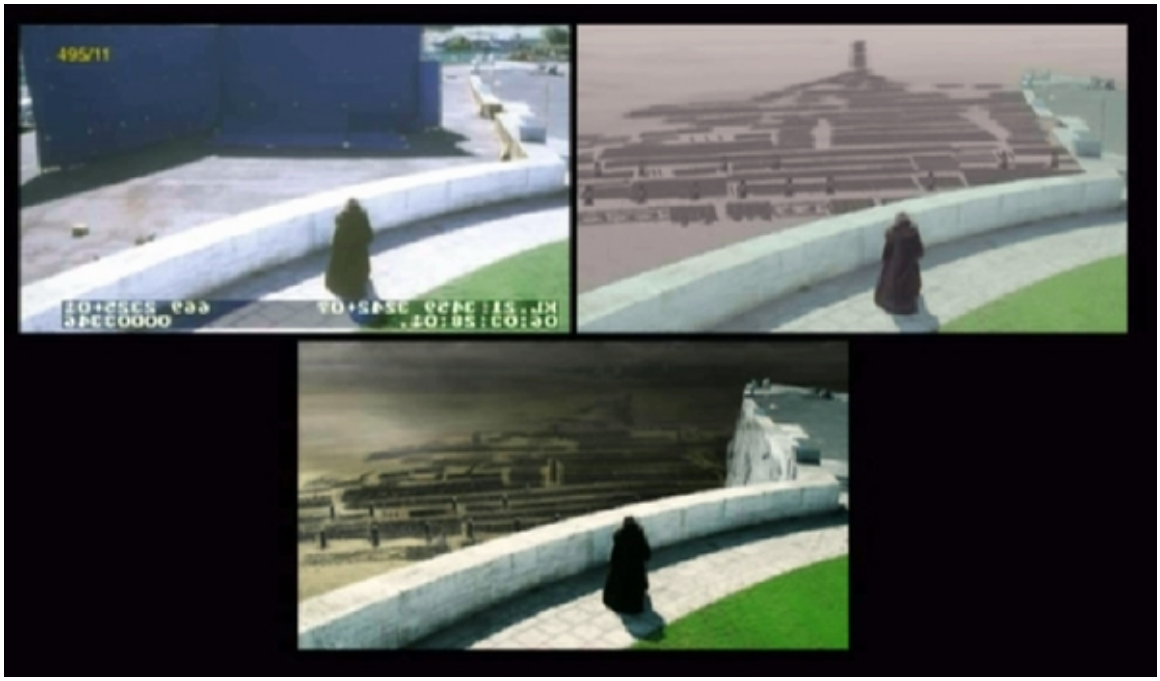

Figure 20. Integrating Massive: John Noble acting on set against a blue screen; Noble composited the pre-visualised Massive army on Pelennor Field; and the final, fully rendered, Massive army with over 350,000 individual artificial people preparing for war. [*Lord of the Rings, Return of the King: Extended Edition*]

Director, points out in the *Fellowship of the Ring: Extended Edition* (*FoTR:EE*) 'WETA Digital' documentary,

> The creatures were designed to have a rationale to their physiology. The Cave Troll was designed to look like a humanoid creature that could physically exist.

In the process of trying to simulate believable physiology, the Weta team also created a level of artificial interiority in their models. The Cave Troll began with a humanoid skeletal system that was re-shaped for the extrapolated bulk and strength of a creature of that size; to that, a complete musculature was added so that the movement, both in its reach and restriction, was consistent with the physical possibilities of the material world. Finally, as Jim Rygiel, Weta's Visual Effects Supervisor, expands, the challenge was to have skin that moved as if it were actual skin, not a photograph of a bodily surface, so Weta linked 'a skeleton [and] muscular system where we literally … could take the skin off the Cave Troll and the next layer underneath would be muscles. If you pulled the muscles, the next layer would be the skeleton.' The fully rendered Cave Troll used all of these elements to simulate how the skin and bodily outside would react consistently with having an actual bodily interior in the material world (*FotR:EE*). Unlike the reflective surfaces of *Terminator 2*, Weta's Cave Troll merged bodily interiority with physical references to create an anatomically feasible creature, generated by a computational system. Far more so than its CGI predecessors, the Cave Troll is the result of a careful linking of knowledge about physicality and embodiment with all the creativity digital technology will allow.

With the digital Cave Troll, Weta achieved an anatomically and photorealistically believable creature, but Randall William Cook, Weta's Animation Designer and Supervisor, notes that simply creating a CGI creature was not enough. Peter Jackson

wanted to be able to insert the Cave Troll not just against a blue or green screen, but dynamically. With the conventional compositing of digital effects, the sequence is shot with a green or blue screen background (which can be filled later with digital effects), or the shot has to be static so animators can add CGI elements without battling with the shifting context of camera movement. However, Weta combined forces with other departments in the film's production and created a wireframe model of the entire sequence inside a computer. Then, motion-capture was used to simulate the movements of the Cave Troll and other people in the scene, most scaled to a different size (necessary because, for example, the Hobbits were played by normal sized actors and then digitally shrunk to roughly two-thirds that size by the time they were inserted into any scene). Motion-capture, or 'mocap,' is when an actor is covered in tiny sensors and acts out a sequence while a computer records the sensor motion which is linked to a database of human(oid) movement and, from that, the movement of a body is extrapolated, often in real-time. This allows all the data needed to animate a humanoid character to be collected simply by making the right motions.[63] All of this information was then composited as one virtual reality simulation and Peter Jackson was given a camera and viewfinder which were both linked to the motion-capture system in order to navigate the information. As Cook notes, 'you could just sit there and run around like a documentary cameraman, which is the way we approached it' (*FotR:EE*). In effect, the human camera operator could introduce the physicality of rough camera movements into a sequence that was laden with CGI, further enhancing the link between the material and the computer-generated models.

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[63] Remington Scott in "Sparking Life: Notes on the Performance Capture Sessions for the *Lord of the Rings: The Two Towers,*" *ACM SIGGRAPH Computer Graphics*, 37, 4, 2003, p. 19 describes the motion capture sessions as involving as few as '50 body markers for real-time capture' once the process was refined.

Getting the virtual camera into the Cave Troll sequence or, more broadly, getting increased interaction (the human-driven camera) into a dazzling simulation (the artificial setting, digitally re-sized actors, and Cave Troll itself), is a problem also frequently addressed in videogame theory. The core tension in current game studies is the debate as to whether narratology—the notion of game-as-narrative—or ludology—game-as-interactive-simulation—is the defining feature of the video game form.[64] While the narratology position is more apt for a sequence that is being shot for a feature film, and thus aims to create one single, defining, and ultimately locked scene, the narratology versus ludology debate does highlight the important intermingling in current digital production. In the Cave Troll scene, heightened interactivity between the various aspects of the sequence facilitated by digital modelling, and a motion-capture setup to allow steadicam-style documentary 'realism', highlights the importance of more interaction in order to tell better visual stories. The debates aside, both game theory and the special effects in *Fellowship of the Ring* illustrate the symbiotic relation between digital effects and embodied interaction as a key tool for visual storytelling in the twenty-first century.

In the larger conflicts visualised in the *Lord of the Rings*, up to 350,000 combatants would be required and the impossibility of motion-capturing and rendering enough individual digital extras led to the creation of a software system called Massive. Instead of focusing on each character individually, Massive focused on the creation

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[64] For a succinct overview of the ludology versus narratology debate see Gonzalo Frasca, "Simulation Versus Narrative: Introduction to Ludology," *The Video Game Theory Reader,* Eds. Mark J. P. Wolf and Bernard Perron, New York and London, Routledge, 2003, pp. 221-35. For more on the ludology argument and its utility for 'cybertexts' see Espen Aarseth, *Cybertext: Perspectives on Ergodic Literature*, Baltimore and London, John Hopkins University Press, 1997.

of one elaborate simulation architecture that could be replicated *en masse*. As described by Remington Scott,

> Massive utilized an advanced autonomous agent architecture in which levels of offensive, defensive and aggressive actions were combined to create the flow and ebb of hordes of digital characters in battle.[65]

In order to ensure believable movement, hundreds of datasets were created using motion-capture outfits so that a database could be constructed with enough elements to be recombined in different enough ways to suggest that each agent was an individual, not one character or form repeated endlessly. To create the actions themselves, the agents had to somehow 'learn' to make their own decisions. In the first two chapters, Artificial Intelligence and Artificial Life models were explored, and in creating Massive, Steven Regelous wrestled with these two differing approaches:

> There's artificial intelligence which is basically an attempt at emulating the processes of a human mind. But there's also artificial life which is more of an inspiration for Massive which is using natural processes to create lifelike results. In Massive we try to achieve natural crowd-like behaviour not by controlling a whole crowd, but by creating one agent who will react naturally to his environment. We call them agents because it's a common term in artificial intelligence for a decision-making unit. Then when we put thousands of them together they will give us an emergent crowd behaviour that is also natural without us having to say how that crowd has to behave. (*FoTR:EE*)

While the Massive agents had a working intelligence probably less sophisticated than an ant's, when CGI armour and weaponry was added, the system could produce what looked like very convincing human motion and physical forms. The combination of organically-inspired information architecture, digital weaponry and armour scanned from actual physical templates, and motion-capture data from embodied movement, resulted in armies of Orcs, trolls, humans and others whose visualisation was realistic enough for the state-of-the-art silver screen. The driving philosophy behind this

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[65] Scott, "Sparking Life," p. 18.

Massive orchestration was a synthesis between the material embodiment of actors, the physicality of the material world and the replicability of information. Significantly, then, while in its most primitive form, the Massive agents could easily be considered the earliest ancestors of artificial people in both narrative and computational terms.

While the Massive agents are a long way from a sophistication of intelligence that might result in them questioning their own origins, the current potential for such an artificial life system does pose the question as to the need for ethical discussions *prior* to the emergence of challengingly intelligent informatic life. However, in one of their test runs, Peter Jackson describes how such a conversation almost appeared abundantly overdue:

> In our first battle test with Massive we had a thousand silver guys against a thousand golden guys and there was a little bit of a surprise when we played it back and we saw in the back there were some little guys in the distance running for the hills. … It was at that point we thought we had written a genuinely intelligent program because there were a few of them that thought, "Bugger this, I'm heading out of here" and they kind of like fled the battlefield. (*TTT:EE*)

After checking the data, the designers realised that the agents were too stupid rather than too smart; they were encouraged to run until they met an enemy combatant, but if the agents began facing away from the fight, they just kept running. While an excellent anecdote, the readiness with which Peter Jackson and the team at Weta saw the Massive agents as meaningfully intelligent does point to their location somewhere on the spectrum of intelligence and, by many measures, something akin to life itself. As Sarah Kember suggested in relation to the emergent artificial life driving certain video game simulations analysed in her *Cyberfeminism and Artificial Life*, even though these first steps toward recognisably intelligent artificiality are in

their earliest stages, the very liveliness of these creatures, and of the artificial people they visualise, suggests that building an ethical framework to comprehend and address informatic life is something that should begin today.[66]

Almost as controversial as the meaning of life, at least for the major players in Hollywood, has been the much debated but barely realised realm of the digital actor, or synthespian (synthetic thespian). The earliest realisations of synthespians have not been new characters, but rather dead actors. Famously, when Brandon Lee died just before completing work in the Alex Proyas-directed *The Crow*, the actor valiantly returned from beyond the grave to complete a few last scenes.[67] Oliver Reed was similarly accommodating after passing away during the filming of Ridley Scott's historical epic *Gladiator*.[68] These actors, or rather their digital doubles, were used minimally in their posthumous state, but the potential for virtual actors gained a great deal of attention in the press and elsewhere. In these cases, where the actor is deceased, the interest may partially derive from the same uncanny liveliness which Catherine Waldby argues surrounded the meaning of the Visible Humans.[69] However, the synthespian question was most loudly asked in the media frenzy just before the release of *Final Fantasy: The Spirits Within* in 2001 which was a blockbuster film supposedly only featuring synthespians.[70] As Barbara Creed argues, the question of economics reigned over the entire synthespian debate:

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[66] Sarah Kember, *Cyberfeminism and Artificial Life,* London and New York, Routledge, 2003, pp. 83-114.
[67] Barbara Creed, "The Cyberstar: Digital Pleasures and the End of the Unconscious," *Screen*, 41, 1, 2000, p. 81.
[68] Stephen Price, "The Emergence of Filmic Artifacts: Cinema and Cinematography in the Digital Era," *Film Quarterly*, 57, 3, 2004, p. 25.
[69] Waldby, *The Visible Human Project,* p. 7.
[70] Julia Moszkowicz, "To Infinity and Beyond: Assessing the Technological Imperative in Computer Animation," *Screen*, 43, 3, 2002, p. 279.

> A digitized film star is a studio's dream: capable of performing any task, continuously available, cost effective – and no scandals, unless, of course, the digital star is given an offscreen life in order to keep alive other areas of the industry such as fan magazines, merchandising and promotions. The possibility of digital stars playing the roles of main characters in feature films may sound like nonsense, but the signs are there.[71]

Perhaps due to the disastrous financial failure of the *Final Fantasy* film—which may have been visually exciting but had a plot more derivative and clichéd than any of the numerous video games on which it was based—discussion of synthespians evaporated quickly thereafter. Had the debate continued, the retort may have been made that while the *Final Fantasy* film featured computer-generated characters visually, the voices and the motion-capture to make the synthespians actually do anything, was still decidedly fleshy. However, it was not until *The Two Towers* was released that the question of whether a virtual actor could be nominated for an Academy Award was seriously discussed. The cause of that discussion was the character of Gollum.

Knowing full well that a virtual character in a lead role would be one of the most difficult aspects of the entire production of *Lord of the Rings*, Gollum was one of the first CGI models created. In a similar fashion to the Cave Troll, Gollum was built up from early paintings and sketches, rendered in clay, detailed in colour, scanned into a computer and then an artificial physiology was incorporated for anatomically accurate movement. However, just as the skin of the Cave Troll provoked the entire physiology to be developed, Gollum's walking-dead look also proved challenging. Earlier, Gino Acevedo had created the model of a dead Boromir which kept its 'just dead' look by having layer upon layer of paint applied. As Acevedo points out in the

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[71] Creed, "The Cyberstar," p. 80.

Gollum documentary, skin is actually quite transparent and the veins and other visible elements are actually seen through layers of skin. An analogous technique was used in painting and airbrushing the Boromir corpse, building up depth with multiple painted layers. Having seen Acevedo's work, Weta Digital convinced him to cross-train as a computer artist, and he eventually performed the same layering process on a digital Gollum, creating depths to Gollum's informatic surfaces (*TTT:EE*). The initial Gollum CGI model was completed before an actor was cast, although that decision was still taken seriously; as Peter Jackson argued,

> Films live or die on their casting, … any of the actors could, in a way, kill a movie if they're the wrong actor and the same was true of Gollum. We were basically meeting actors who could do good voice work because at that point we thought we were just looking for a voice actor (*TTT:EE*).

However, when Jackson cast Andy Serkis in the role of Gollum, Serkis' performance demanded the entire approach to Gollum be re-thought.

During Andy Serkis' interview for the voice of Gollum he based the tortured, raspy voice in part on the fits his cat would have while coughing up fur-balls. Being an extremely physical actor, Serkis found he could not 'be' Gollum without replicating the full motions and 'fully act out the pain and wretchedness,' despite trying out for a voice-only part.[72] During the interview, Peter Jackson recalls a fundamental shift in the way he envisioned cinematic Gollum;

> What was interesting is that in order to create the voice he was having to distort himself and put all this expression in his face and that's where he found the voice. He was actually doing the character. … It was really in that audition that I came to realize something that had never occurred to me: that the voice and the facial expressions and the energy are related; I mean, you can't separate the two. (*TTT:EE*).

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[72] Andy Serkis, *The Lord of the Rings, Gollum: How We Made Movie Magic,* London, HarperCollins, 2003, p . 5.

Rather than just ask Serkis to record Gollum's voice, Jackson hired him for a far longer period so that Gollum could have a physical presence on set with the other actors having a living person with whom to interact. During filming Serkis would wear a special white outfit that would make his physical form easier to digitally paint over if a shot was used with him still on set. However, for the most part the intention was to film a 'reference plate' with Serkis acting alongside the other actors, and then do a 'mime pass' where Serkis left the scene and the actors replicated the sequence with a space where Gollum would later be inserted digitally. However, as Brian Van't Hul, Weta's Visual Effects Cinematographer, and Joe Letteri, Weta's Visual Effects Supervisor, both point out, the reference plates were often the better shots both because the actors tended to respond better when acting against another person (even one in what was affectionately nicknamed a 'gimp' suit), and Serkis' physicality would add elements to a scene in an unexpected fashion (*TTT:EE*). For example, when Gollum attacks Sam in *The Two Towers*, gravel is kicked up and a cloak lying on the ground is spun around; the reference plate shows this clearly but the mime pass could not replicate such action with any precision. While motion capture was used to drive a lot of Gollum's motion, in the cases where Serkis' reference plates were used another technique was adapted: rotoscoping. Rotoscoping is simply painting over the top of filmed objects, allowing for a smooth integration, albeit at the cost of substantial labor to edit every frame.[73] Weta adapted the process using their digital keyframe animation technology and created a hybrid form they called 'roto-animation' (*TTT:EE*). While the technicalities are remarkable, it is also important to note that in bringing Gollum to the cinema screen, the material

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[73] Isaac V. Kerlow, *The Art of 3d: Computer Animation and Effects,* 3rd ed, Hoboken, John Wiley & Sons, 2004, p. 338.

Figure 21. Andy Serkis in a motion-capture suit, and the fully rendered Gollum composited using keyframe animation and the motion information captured. [*Lord of the Rings, The Two Towers: Extended Edition*]

Figure 22. Gollum; a pre-rendered Gollum; and Andy Serkis' reference shot. [*Lord of the Rings, The Two Towers: Extended Edition*]

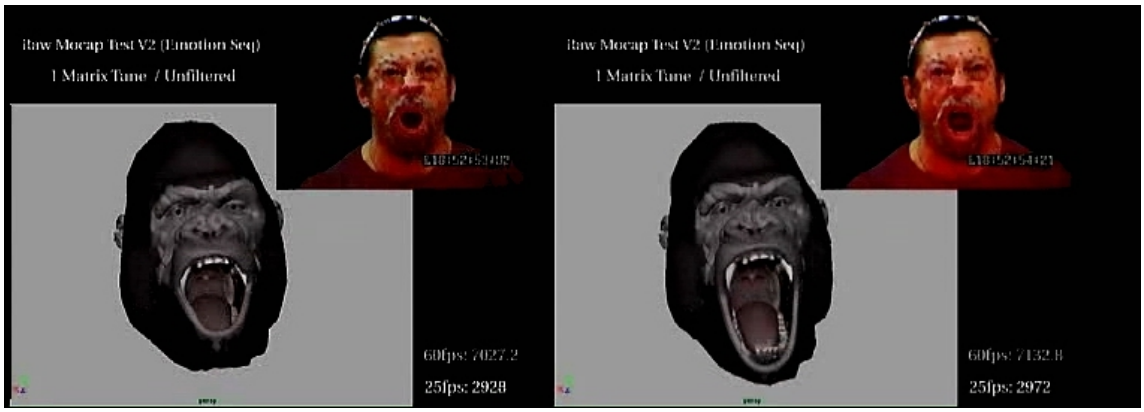

Figure 23. Andy Serkis undergoes facial capture in order to animate the gigantic jaw of Hollywood's favourite primate star, *King Kong*. [*King Kong*, Production Diaries]

embodiment of Andy Serkis was found to be more and more indispensable as the production progressed. Far from a CGI character with a human voice, Gollum was a synthesis of embodied materiality and computational informatics.

The specificities of Andy Serkis' physical body had one more extremely important impact on building Gollum: as Serkis became more and more the template for Gollum and motion-capture commenced it was discovered that the CGI model of Gollum, so painstakingly created at the outset of the production, did not accurately reflect enough of Andy Serkis. The Gollum digital model had a virtual physiology, but Andy Serkis had a real one, and in motion-capture, Serkis' movements would not line up with the pre-Serkis model. Thus, very late in the production of *The Two Towers*, Peter Jackson requested the digital Gollum be rebuilt and remodeled using more of Serkis as a template. The rebuilding occurred and Andy Serkis' physical movement became the movement directly driving the digital character. Significantly, the motion-capture team started to think of this process as *performance* capture:

> Performance capture is the soul and essence of a realistic digital character's emotion. This is because there is a deep unconscious level of bonding that we invest into another human or creature with human emotions. We are so trained to read each other's actions that inconsistency in a character's performance can mean the end of the vested connection that an audience has maintained with an emotionally realistic digital character.[74]

Thus through detailed performance capture, and exceptional keyframe animation to make Gollum's face as emotive as possible,[75] Gollum was brought to life. Rather

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[74] Scott, "Sparking Life," p. 19.

[75] While facial capture was experimented with (as noted in Serkis, *Gollum*, pp. 90-91) it proved too problematic for *The Two Towers*. However, Andy Serkis has also provided the motion-capture data for the giant ape in Jackson's 2005 *King Kong* and for that film, facial capture has been successfully integrated see 'Post Production Diary - 11 Weeks To Go', *KongIsKing.net*, Sep. 30, 2005, http://www.kongisking.net/perl/newsview/15/1128124089, accessed 12 November 2005.)

than being the avatar of an actorless character as was feared in discussions of the synthespian, the combination of Andy Serkis' on-screen work, voice recording and motion-capture labour meant that he spent more time 'acting' in various capacities than most of the other cast involved in the epic production of *Lord of the Rings*. Moreover, Gollum is an iconic artificial person in that he is a synthesis of material embodiment, creative talent, computational power and digital artistry, all realised on screen in a single, emotionally and physically believable performance.

While the characters of Middle Earth include artificial people, what of the environments themselves? The largest and most elaborate scene and setting took place on Pelennor Fields, but as Peter Jackson explains in the *Return of the King: Extended Edition* (*RoTK:EE*),

> The actual full Pelennor Fields doesn't exist, and never did exist. So, the only option that we really had was to create it in a computer. We created a virtual location. In fact, Alan Lee … drove a lot of the creation of the virtual landscape. He had the whole Pelennor Fields environment absolutely in his head, obviously from the days of having to do watercolour paintings.

Pelennor Fields uses elements drawn from all over New Zealand; mountains from one location, grass fields from another, clouds and weather shot across the two islands and so forth. These were all stored for use in Weta's database, creating a digital index from which Pelennor Fields could be built. Indeed, in describing Peter Jackson's notes for the battle on Pelennor Fields, co-producer Rick Porras recalls that he 'wanted everything, everything in the Weta Digital arsenal, to be thrown at our heroes' (*RoTK:EE*). Pelennor Fields itself was composited and modeled into a fully navigable three-dimensional space in which cameras could be placed in any position, just like a material setting. All the characters and sets for the White City were composited in, while Massive was also pushed to its limit with over 350,000 Orcs

and other soldiers created. Illustrating that technology is not necessarily anthropocentric, motion-captured equine data also allowed Massive to also create and drive over 6000 horses during the climactic battle for the White City. Sean Cubitt argues that 'digital technologies promise to elevate fantasy worlds above the troublesome everyday world,'[76] and while he was linking the recent spate of fantasy films such as *Lord of the Rings*, *Harry Potter* and C. S. Lewis' *The Chronicles of Narnia* to a depoliticized cinema—perhaps with some fairness since their popularity became particularly evident in the aftermath of September 11th 2001—it is notable that even this fantasy world is still attached to the material everyday, just in segments. In his seminal work on new media, Lev Manovich argues that 'database and narrative are natural enemies.'[77] However, while Pelennor Fields is a database-facilitated virtual location, it does not erase New Zealand's landscapes so much as reify them. Moreover, as Stephen Price notes, reconfiguring visual elements is something sound editors have been doing for the entire history of sound cinema, so

> the cinematic image is merely catching up to where sound has long been. Few of the sounds one hears in a movie originate at the point of filming or have not been subject to further processes.[78]

The database may be a part of the process, but the use of that database does not amplify the division of elements, rather it emphasises the need for meaningful synthesis in order to create a landscape and inhabitants which span the informatic and material realms.

Somewhat contradictorily, Sean Cubitt also notes that 'by 2001, the pristine wilderness of Aotearoa New Zealand's South Island in *Lord of the Rings: Fellowship*

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[76] Cubitt, *The Cinema Effect*, p. 247.
[77] Lev Manovich, *The Language of New Media*, Cambridge and London, MIT Press, 2001, p. 225.
[78] Stephen Price, "The Emergence of Filmic Artifacts: Cinema and Cinematography in the Digital Era," *Film Quarterly*, 57, 3, 2004, p. 30.

of the Ring has become pure special effect.'[79] However, as the 'New Zealand as Middle Earth' features on the DVDs, the tie-in *Lord of the Rings Location Guidebook*[80] and increase in New Zealand's popularity as a tourist destination following the films suggest, along with Peter Jackson's and the cast and crew's ongoing enthusiasm about New Zealand, the films did not reduce New Zealand to a special effect, but rather special effects provocatively sampled New Zealand in a manner which encouraged many viewers to visit the physical locations themselves. If anything, tourists might be surprised to discover cars and roads littered across the unmediated New Zealand, but that, too, is a useful discovery in terms of highlighting the differences between digital environments and their physical counterparts. Nevertheless, Pelennor Fields, like so much of the *Lord of the Rings* production, is part of an artificial cinema which links the material world with the art of digital processing, allowing that space to be populated by artificial people of various forms. Moreover, as seen in the previous chapter, the recombinant spaces of Middle Earth are of tactical value in building a narrative location for artificial people and in facilitating an artificial cinema which highlights both fantastical spectacle and the very real material world of New Zealand.

From the Cave Troll through to the armies and horses generated by Massive and the fully realised artificial person in a leading role, the production of the *Lord of the Rings* cinematic adaptation highlights the links between the fleshy specificities of embodiment and the magic manipulability of digital art. Massive highlights the role of simulated Agents and begs the question about their own proto-personhood, while

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[79] Cubitt, *The Cinema Effect*, p. 265.
[80] Ian Brodie, *The Lord of the Rings: Location Guidebook*, Auckland, HarperCollins, 2002.

Gollum's nuanced characterisation and visual form is the very avatar of a cinema of synthesis and symbiosis where the material and the computational work together to facilitate the magic of cinema. As Cubitt argues, escaping total cinema is about allowing the conversations and communication to be re-established between the silver screen and the world outside it. The artificial cinema of the *Lord of the Rings* and the artificial people who populate it go a long way toward etching exactly the cinematic form for which Cubitt is searching.

Conclusion

In film theorist Vivian Sobchack's most recent work, *Carnal Thoughts*, she argues for the inextricable importance of bodies in making meaning from and during the cinematic experience, championing 'the embodied and radically material nature of human existence and thus the lived body's essential implication in making "meaning" out of bodily "sense."'[81] While Sobchack's phenomenology of cinema maps the traffic in bodily meaning between viewers and the screen, this chapter has built upon a similarly intense desire to highlight the importance of embodiment but from the other side of the screen, in terms of the inspiration, production, meaning, screening and selling of blockbuster films. In examining the *Matrix* franchise, it quickly became apparent that the narrative world and state-of-the-art special effects—most notably the 'bullet-time' sequences—*highlighted* the symbiotic relationship between the fleshiness of specific embodiment and the expansiveness of digital technology. The bullet-time effects, far from erasing the body, linger upon the physical form. At a narrative level, Neo's role as the digital messiah is entirely premised on his body and technology operating with a level of synchronicity that

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[81] Sobchack, *Carnal Thoughts*, p. 1.

leads to a transformative conclusion but, as Erik Davis argues, it is an 'ultimately spiritual transcendence that, in the film's basic twist, is actually embodiment.'[82] In the post September 11th shift in the franchise's sympathies to a more balanced view of potentially 'othered' machine life, *Reloaded* and *Revolutions* point not just to the visual surfaces of bodies, but to the depths of bodily interiority and the depths of intelligent machines. The seeming oxymoron of the intercorporeality of cinematic characters builds a fuller comprehension of the changes in meaning and materiality that the *Matrix* provocatively highlights in the nexus of material bodies and digital technologies. Alongside the artificialities mapped in previous chapters, the examination of the *Matrix* franchise illustrates the emergence of artificial people who exist at the intersection of embodiment and technology, working, ultimately, for a sustained symbiotic relationship between the two at both personal and cultural levels.

In examining the science fictional narratives of artificial life, embodied meaning and digital spectacle that combine to form Weta Digital's production tales in the making of the *Lord of the Rings* film trilogy, artificial people are also evident. In the construction of a host of creatures from the Cave Troll to Mumakil, the processes combine the best of physical production and digital artistry through the focal arrangement of embodied form. The Massive software system highlighted the acting potential of artificial life, but only when equipped with weaponry, armour and algorithms based in the material world. Pelennor Fields presented a fully realised virtual realm built using a digital database, but challenged the new media logic of the database, highlighting its role in linking the physical and informatic realms, not separating them. Most notably, Andy Serkis and the team at Weta Digital took the

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[82] Davis, "Synthetic Mediations," p. 20.

physicality of an actor, the informatics of material acting via motion capture, and the best of computer-based keyframe animation to facilitate an artificial person who, by many standards, gave the finest performance of anyone in the *Lord of the Rings* trilogy. Gollum *is* an iconic representation of both artificiality and state-of-the-art special effects in the twenty-first century which works on a principle of the symbiosis of material and digital forms, with embodied meaning as their organisational framework.

This exploration of artificiality in the *Matrix* and *Lord of the Rings* films has wrestled with Sean Cubitt's notion of a twentieth-century cinema effect where the operations of commodity culture govern commercial cinema production and render the resulting films politically toothless. This chapter has sought to highlight the political utility of early twenty-first century blockbusters, and their related texts, in addressing the important questions of embodiment, subjectivity, technology, informatics, and the many potential intersections between these realms. While mapping artificial people occasionally resorts to the rhetoric of subjectivity in order to highlight their personhood, the very existence of artificial people points to the dramatic destabilisation of a subject/object distinction. Working with a broad definition of science fiction that includes fantasy and horror, J.P. Telotte's reminder about the influence of cinema is telling:

> Yet with their emphasis on artifice in its broadest sense—on the creations of science, technology, various mechanisms—and an increasing fascination of our own level of constructedness, our science fiction films often seem to blur that distinction between life and artifice … and they proceed to interrogate that very blurred boundary.[83]

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[83] J. P. Telotte, *Replications: A Robotic History of the Science Fiction Film*, Urbana and Chicago, University of Illinois Press, 1995, p. 2.

The speculative and spectacular elements of the films analysed, and the emergent entities inhabiting both their narratives and special effects, have given rise to the symbiotic conjunctions that are artificial people. Their politics of connectivity in some fashion re-energises the politics of cinema and, following Cubitt's argument that cinema must rediscover the 'meaningful fourth dimension, that of communication,' the politics of artificial people, inhabiting an artificial cinema, is, if nothing else, about starting new conversations, and finding common ground, between the realms of embodiment, physicality, technology and informatics while still enjoying the pleasures and perversities of the blockbuster film.

CHAPTER 5: ARTIFICIAL CULTURE

Introduction

The long shadow of September 11th 2001 and, in particular, the collapse of the World Trade Centre Towers in the aftermath of terrorist attacks, continues to have substantial political, military, ethical and global ramifications five years later. Therefore, it was no surprise that at the 74th annual Academy Awards in March 2002, Hollywood and the entertainment industry *en masse* took great pains to carefully and strategically position themselves in relation to an event in which the number of deaths paled in comparison to the symbolic power of an attack on the city at the very heart of the American Dream. There was no shortage of actors and filmmakers willing to speak on the importance of the power of film in such times; Tom Cruise did an evocative job delivering a well-scripted speech which included the lines:

> My actor friends said to me, what are we doing? Is it important? What of a night like tonight? Should we celebrate the joy and magic movies bring? Well, dare I say it: *more than ever*.

Cruise continued to evoke the 'magic' of cinema as both an imaginative and potentially healing space. Whoopi Goldberg, the host for that ceremony, then introduced New York's most notable filmmaker, Woody Allen, who in his own rambling fashion gave a far less scripted and more personal plea for the ongoing importance of New York as a location where films should be set and films should still be made. Allen also introduced a four-minute tribute film to New York seen through the eyes of films set there over the course of a century. The sequence was edited together by Nora Ephron, famous for such romantic comedies as *Sleepless in Seattle* which treats New York as the emotional heart

of America. Ephron's New York montage featured clips which lingered on iconic landmarks such as the Empire State and Chrysler buildings as well as the Brooklyn Bridge and Central Park. However, the core of the piece emphasised the individuals and the dreamers who constitute the city, with clips from musicals with Gene Kelly and Frank Sinatra singing New York's praises in *On The Town*, through to John Travolta's frenetic breakout film *Saturday Night Fever*. Comedies including *Tootsie*, *Ghost Busters* and Melanie Griffiths' *Working Girl* all got a few seconds' screen time, with even science fiction making an impact with both *Men in Black* and the original 1930s *King Kong* with the giant ape atop the Empire State Building. The clip ended with a line from Mel Brooks' 1968 feature debut *The Producers*: "I want everything I've ever seen in the movies!"[1] While the short film did a fine job in evoking the power of New York as cinematic space, what was most notable was the powerful absence of the Twin Towers in any of these clips. Ephron and the Academy re-visioned a New York not so much mourning the Twin Towers, but rather one in which the World Trade Centre had never fallen as it had simply never existed. Through one of the filmmaker's oldest magic-making tools, the power of montage, the cinematic enactment of the American Dream was redeployed, escaping the seemingly omnipresent mourning of what can easily be called the Western world's 'Long September' by erasing and denying those traumatic signifiers in their entirety. Of equal if not greater importance, the Academy was far from alone in erasing the Twin Towers.

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[1] Although the irony may have been lost on many viewers; the line is actually delivered as two conmen plan a way to exploit filmmaking for financial gain by making the worst film they can imagine which, completely by accident, turns out to be a huge success.

In the months following September 11, a number of Hollywood releases and television shows were either digitally edited to remove images of the Twin Towers, substantially re-shot to insert new footage, or shelved with their release dates moved back anywhere from three months to six months. *Zoolander*, *Serendipity*, *People I Know*, *Spider-Man* and *Men in Black II*, all in post-production at the time of the attacks, either digitally removed the Towers from backgrounds and New York skylines or, in the most extensive case, the producers of *Men in Black II* re-shot an entire sequence in order to move that film's climax from the World Trade Centre to the Chrysler Building. Films and television series with terrorist themes and images such as Arnold Schwarzenegger's *Collateral Damage* or the ironically 'real time' television phenomenon *24* both had their release dates pushed months into the future in order to demonstrate 'sensitivity' to the US's national trauma.[2] A ubiquitous and yet unofficial cultural taboo saw the Twin Towers, for all intents and purposes, cease to exist in mainstream new-release visual media. Those few films engaging with the ramifications of the attacks, such as Spike Lee's *25th Hour* or the collaborative global reactions of *11'09"'01 - September 11*, did so in a roundabout fashion, either relying on shooting locations outside of the US, or relocating the cultural trauma as character-specific personal pain. The obvious exception to this ban was the 'real' news footage of the planes impacting the Towers and their subsequent collapse. This oft-repeated footage became the *only* footage,

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[2] Steven Jay Schneider, "Architectural Nostalgia and the New York City Skyline on Film," *Film and Television After 9/11*, Ed. Wheeler Winston Dixon, Carbondale, Southern Illinois University Press, 2004, pp. 35-38. Schneider also notes that despite these corporate displays of sensitivity, many film and television commentators found the removal of the Towers more offensive than if they had been left in.

reinforcing a CNN or Fox News view of these events in an almost universal fashion (at least in terms of Western mainstream media). Outside of the news media, with regard to the Twin Towers, the trauma of September 11 ostensibly initiated a strategy of non-representation across the spectrum of the mainstream entertainment industries. However, despite it being one of the films re-edited in the wake of the attacks, this chapter argues that the *Spider-Man* film and its sequel meaningfully engage with the Towers and the broader trauma of the West's Long September. Spider-Man's long comic book history as a New York citizen, as well as digital special effects and many of the elements of artificiality mapped in previous chapters combine to facilitate a cinematic mode of artificial mourning.

Before the Mourning: Spider-Man and New York City

According to Bradford Wright in his history of comic books in America, when Stan Lee and Steve Ditko originally envisioned Spider-Man in 1962, he was not a man of steel, nor a billionaire with a chip on his shoulder and a high-tech utility belt, but rather 'an adolescent—one who had to contend with his own insecurities and confusion even as he had to fight the bad guys.'[3] When teenager Peter Parker was first bitten by a radioactive spider and gained super-human strength and agility, like most teenagers his thoughts did not immediately shift to saving the world; while aiming to financially support his Aunt and Uncle with whom he lived, Peter initially sought simply to make money as a performer and entertainer. He quickly became arrogant, so much so that after one show

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[3] Bradford W. Wright, *Comic Book Nation: The Transformation of Youth Culture in America*, Baltimore and London, Johns Hopkins University Press, 2001, p. 210.

he failed to lift a finger when a criminal stole the takings, claiming it was not his problem. Later, however, when Peter's uncle was killed, he discovered that the murderer was the same person who had robbed the show. Wracked with guilt and shame at his uncle's death, Peter Parker pledged to fight against injustice and the coda 'with great power comes great responsibility' was born.[4] However, unlike Superman or Batman, the best-selling superheroes at the time, Peter Parker's Spider-Man did not inhabit a fictional Metropolis or dark Gotham, but rather lived and fought in the very city Stan Lee saw outside the window as he wrote: New York.[5] Spider-Man quickly became Marvel Comics' most recognisable icon, a teenage everyman living in the same city as many of *Spider-Man's* readers. Moreover, far more so than his precursors for whom superheroism was their essence, Peter Parker's everyday life was central to the story both as he struggled with his Spider-Man alter ego and as he tried to make ends meet as a photographer for one of New York's less reputable papers, *The Daily Bugle*. His personal life, and especially love life, often was as much a selling point for the comics as his plentiful and colourful nemeses. Peter Parker and Spider-Man were both intrinsically tied to the city in which their lives took place.

Comic book superheroes are often more deeply tied to their cities and surrounds than characters in non-visual narratives. Moreover, that tie is not just conceptual, but rather a link at the level of embodiment. As Scott Bukatman argues, Spider-Man's superhero

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[4] Wright, *Comic Book Nation*, pp. 210-211.
[5] Scott Bukatman, *Matters of Gravity: Special Effects and Supermen in the 20th Century*, Durham and London, Duke University Press, 2003, p. 206.

body is the 'consequence of technology run wild. The superhero body is everything—a *corporeal*, rather than a *cognitive*, mapping of the subject into a cultural system', and that system is visualised through the cityscape.[6] Just as New York is an icon of modernism and of technology, both in its positive aspects and its darker underside, so too is Spider-Man in his victories and his defeats. As Bukatman argues further:

> Superhero comics embody the grace of the city; superheroes are graced by the city. Through the superhero, we gain a freedom of movement not constrained by the ground-level order imposed by the urban grid.[7]

With a corporeality no longer anchored to the street, nor to the mundane horizontal, the numerous artists on the Spider-Man comic book could draw walls as floors and the space above the street, between buildings, as frantic pathways. Indeed, Bukatman explicitly links Spider-Man's abilities and relationship to the city with Michel de Certeau's tactics of spatiality; Spider-Man forges his own pathways transforming the metropolitan grid of place and modernity into tactical spaces of the struggling, embodied subject.[8] The New York envisioned in the *Spider-Man* comics is thus a pre-digital artificial space. Like William Gibson's Walled City in *Idoru*, discussed at length in chapter three, New York is a tactical space which can be navigated and, to a considerable extent, reconfigured through the movement, motion and meaning of the subject to the extent that the boundary between subjectivity and spatiality blurs just like the frenetic motion of an everyday superhero in action.

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[6] Bukatman, *Matters of Gravity*, p. 49.
[7] Bukatman, *Matters of Gravity*, p. 188.
[8] Bukatman, *Matters of Gravity*, p. 207.

Spider-Man's New York is not just an artificial space in terms of the subjectivity of Peter Parker, but is also inextricably intertwined with the politics of the material world. In the late 1960s and early 1970s, the counterculture and America's involvement in the Vietnam War had a marked impact on Peter Parker's comic book life. At Columbia University he had to weigh up the odds between striking students and an inflexible, but lawful, Dean over the issue of affordable student accommodation.[9] In 1970 Spider-Man battled a corrupt New York District Attorney and was forced to reflect on the difference between law and justice.[10] Also that year Stan Lee agreed to incorporate a strong anti-drug message into the *Spider-Man* stories which resulted not only in Spider-Man's battle with drug dealers but also Peter Parker's best friend developing a drug habit after a romantic relationship turned sour. The two-part story clearly depicted drug use, something not allowed under the comics code, but Stan Lee pushed ahead and published without the code's endorsement.[11] However, throughout these turbulent years Spider-Man was still written as youthful and, even in the face of grave difficulties, optimistic. It was not until 1973 that Spider-Man, and the world of Marvel superheroes, lost their last vestiges of innocence.

Gwen Stacy was Peter Parker's first love, and the girl many fans expected would eventually become Mrs Spider-Man. For more than a decade, Peter Parker and Gwen had been romantically linked in some fashion, but she remained unaware of Peter's

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[9] Wright, *Comic Book Nation*, p. 234.
[10] Wright, *Comic Book Nation*, p. 238.
[11] Wright, *Comic Book Nation*, p. 239-240.

alter-ego. When Spider-Man's arch-enemy the Green Goblin discovered who Peter Parker really was, he kidnapped Gwen. Atop the George Washington Bridge,[12] the Goblin held Gwen and waited for Spider-Man. When Peter arrived and the inevitable battle began, Gwen was knocked off the bridge, but Spider-Man managed to snag her leg with his webbing just before she hit the ground. However, in *Amazing Spider-Man* number 121 published in June 1973, in the panel where Gwen's rapid descent is brought to an abrupt halt, the word 'SNAP' appears next to Gwen's limp form. When Spider-Man pulls Gwen back to the top of the bridge, he is jubilant thinking that, as superheroes were always supposed to, he had saved the damsel in distress. However, Spider-Man quickly discovers that Gwen Stacy is dead and that he may very well have killed her, having snapped her spine by breaking her fall too quickly. As Arnold Blumberg argues, this one event ended the 'Silver Age' of the comic book superhero:

> Gwen Stacy's death was undoubtably the end of an era, a tectonic jolt that shook the superhero genre out of one cemented cycle of cause and effect and into a new paradigm that better reflected the socio-political and cultural sensibilities of its readers.[13]

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[12] There is considerable confusion as to the exact bridge from which Gwen fell. In the comic book it is named the George Washington Bridge, but the pictures look far more like the Brooklyn Bridge. Moreover, as addressed below, in the *Spider-Man* film, this scene is reenacted atop the Queensboro Bridge.

[13] Arnold T. Blumberg, "'The Night Gwen Stacy Died': The End of Innocence and the Birth of the Bronze Age," *Reconstruction*, 3, 4, 2003, http://www/reconstruction.ws/034/blumberg.htm, accessed 22 August 2004. Blumberg argues further that:

> The death of Gwen Stacy was the end of innocence for the series and the superhero genre in general—a time when a defeated hero could not save the girl, when fantasy merged uncomfortably with reality, and mortality was finally visited on the world of comics. To coin a cliché, nothing would ever be the same.

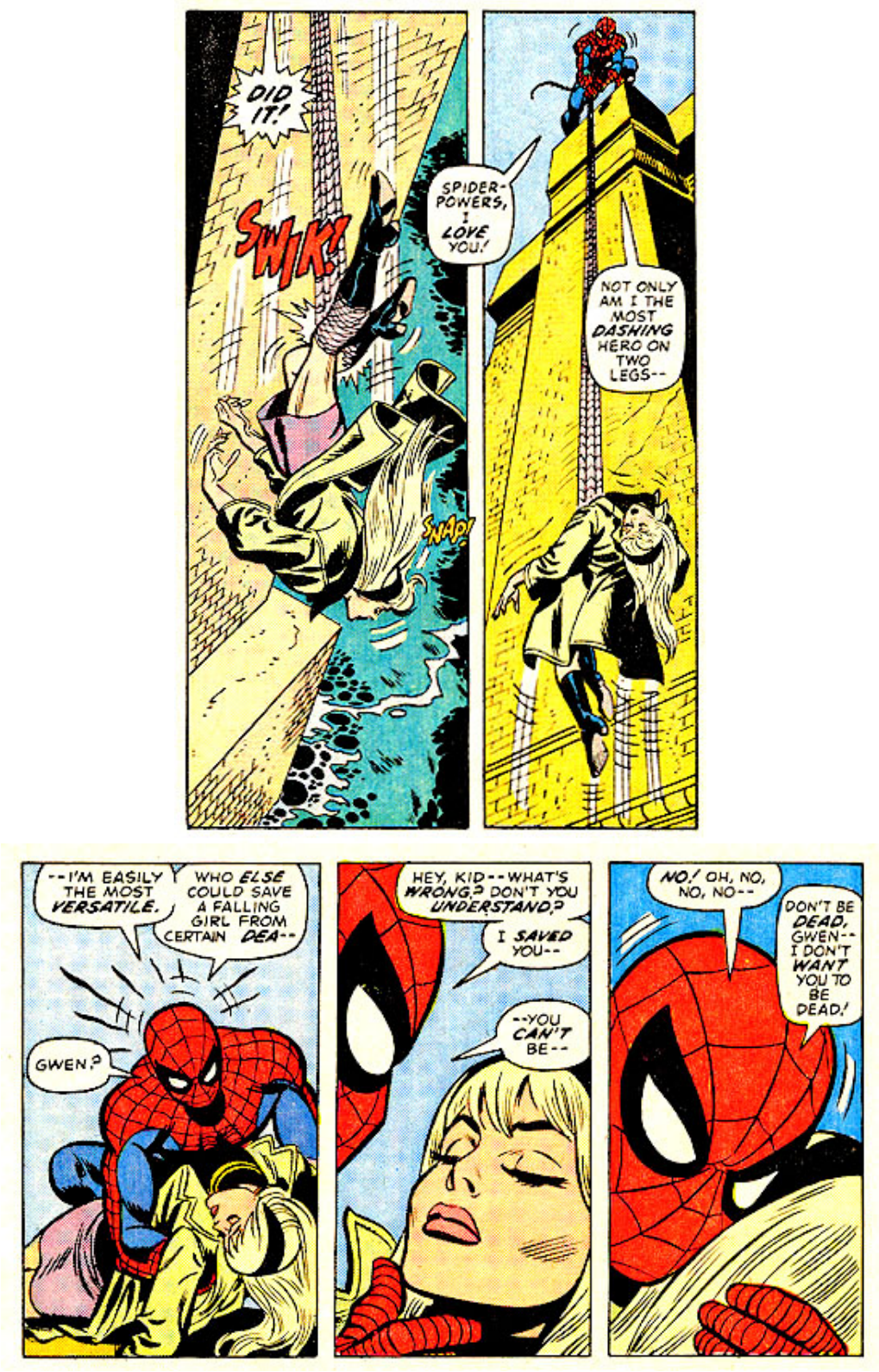

Figure 24. *Amazing Spider-Man*, vol.1, no. 121, June 1973.

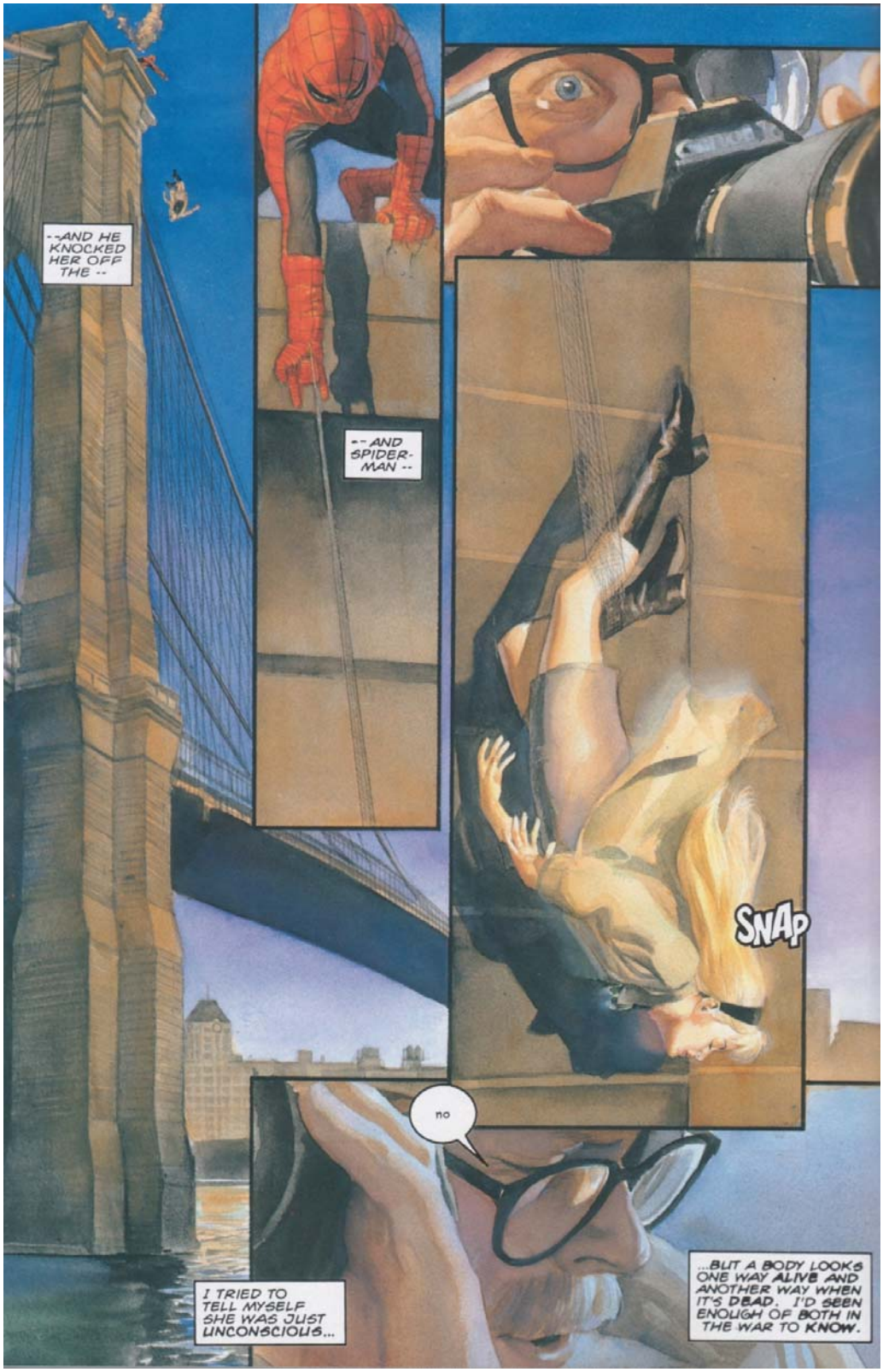

Figure 25. *Marvels*, no. 4, Marvel Comics, 1994.

Gwen's death and the effective 'failure' of Marvel's most recognisable comic book hero was a dark moment in Marvel history and ushered in a much grittier era of comic book writing. The guilt of Gwen's death haunted the *Spider-Man* books for decades, even after he later fell in love with Mary-Jane Watson. In 1994, in a graphic novel tellingly entitled *Marvels*, Kurt Busiek and Alex Ross revisited the classical moments in Marvel's superhero universe through the eyes of a fictional photographer whose career followed the 'marvels' in action. Significantly, Busiek and Ross end their series with a stunningly painted and re-told version of Gwen Stacy's death falling from a New York bridge, showing that two decades later this was still *the* historic moment for the Marvel universe, and a moment which deeply tied Spider-Man's losses to the city of New York.

Given Spider-Man's strong links to the city, it was no surprise when the promotional campaign for the first *Spider-Man* feature film was constructed around New York landmarks. The film was scheduled for release in May 2002 and advertising hit full momentum in August 2001 with a series of posters and one of the most expensive trailers ever made. In it, technologically-savvy bank robbers plunder a New York bank and begin to escape in a helicopter, only for it to mysteriously stop mid-flight and then get yanked backwards. The helicopter finally stops and is snared in a gigantic spider web hung between the Twin Towers of the World Trade Centre. The scene then cuts to the first ever visual of a computer generated imagery (CGI) Spider-Man with the Twin Towers clearly reflected in his mirrored eyes, before he swings into the cityscape at full speed. Less than a month after the trailer began playing in cinemas it was removed by Sony Entertainment, the film's distributors, the day following the terrorist attacks on the

Figure 26. The first *Spider-Man* film trailer released in cinemas late August 2001.

Figure 27. The first *Spider-Man* film trailer released in cinemas late August 2001.

Figure 28. The first *Spider-Man* film trailer released in cinemas late August 2001.

US. In a CNN article published on September 13th, Columbia TriStar's president of marketing, Geoffrey Ammer, stated "The decision [to pull the trailer] was an easy one. […] It's based on humanity. No cost can outweigh the sensitivity of the issue."[14] While sensitivity in the immediate aftermath of the fall of the Twin Towers is understandable, it is noteworthy that despite two *Spider-Man* films to date released on DVD, replete with extra material from across the history of the comics and films, the World Trade Centre trailer is not amongst them. Nor has the trailer even been officially discussed since September 13th 2001 by Columbia TriStar or their owners Sony Entertainment. The first *Spider-Man* trailer is as much a ghost as the Twin Towers themselves. However, while one aspect of the Spider-Man franchise chose to avoid any mention of the tragedy, the Marvel comic books made the opposite decision.

Amazing Spider-Man number thirty six, released with a cover date of December 2001, came with a completely black cover with nothing visible other than the outline of the comic book's title. The first page read: 'We interrupt our regularly scheduled program to bring you the following Special Bulletin.' This notice positioned readers within a televisual frame of expectation wherein images of the Twin Towers could still be found, but what the following pages contained was a tribute story to the firefighters, police women and men, the service personnel, and every other person who helped in the

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[14] CNN Entertainment, "TV, film execs reassess scheduling, content: An altered skyline, a wounded psyche," *CNN.com*, September 13, 2001, http://www.cnn.com/2001/SHOWBIZ/TV/09/13/terror.entertainment/index.html, accessed 25 August 2004.

Figure 29. *Amazing Spider-Man*, vol 2. no 36, December 2001.

Figure 30. *Amazing Spider-Man*, vol 2. no 36, December 2001.

immediate wake of the September 11th tragedy. On page two, as *Spider-Man* arrives at 'Ground Zero' crying bystanders ask "Where were you?", "How could you let this happen?", on which he reflects, "How do you say we didn't know? We couldn't know. We couldn't imagine." The following story sees the rest of the staple Marvel super-heroes arrive at Ground Zero, help out with the clean-up and rescue attempts, and show their deep respect for the 'real' heroes. In an important scene, an exhausted and grim Spider-Man is drinking water with other emergency workers, his mask peeled half-way up, revealing the face of an ordinary New Yorker. In the last panel of that page, Peter Parker laments, "I have seen other worlds, other spaces. I have walked with gods and wept with angels. But to my shame, I have no answers." While the Marvel universe had always existed alongside the 'real' world, the world of superheroes had still existed in *parallel* to our own, with a similar cityscape but populated by different people, aliens, super-villains and superheroes; the sudden intersection of the comic book realm with 'real' world events was a substantial change for Marvel. While it might be cynically suggested that the *Amazing Spider-Man* issue really served to infuse the Marvel super-heroes with some of the positive glow which had been bestowed by the news media onto the service people working at 'Ground Zero', a more important point is that the story ends on a decidedly anti-war note. The comic emphasises the role of superheroes alongside New York in its mourning, including statements such as: "But we are here. Now. With you," emphasising the grief which the Marvel superheroes are sharing with New Yorkers. More politically charged, however, was the dialogue "We live in each blow you strike for infinite justice, but always in the hope of infinite wisdom," explicitly critiquing the invasion of Afghanistan which was codenamed 'Infinite Justice'.

Similarly, the near final line, "And All Wars have innocents" is unambiguously anti-war, or at least anti-revenge-based conflict.

Prior to the release of the first *Spider-Man* film in 2002 the character and the broader franchise were intrinsically linked both to New York the city and its eight million citizens. From Peter Parker's earliest incarnations in the 1960s his superhero persona was never the full story, the angst-ridden everyman under the mask always part of the comic book's massive appeal. The man and the hero were not just linked through narrative, but through the visually embodied relationship between the superhero and the spatiality of the cityscape itself, a relationship which situated the imagined New York as artificial space. Spider-Man's growing pains in the late sixties and early seventies mirrored Western culture, but the trauma and loss signified by Gwen Stacy's death permanently linked Peter Parker's trauma to New York City. In the marketing and pre-release versions of a filmic Spider-Man, the fall of the Twin Towers and their erasure from entertainment media was directly mirrored by an expensive but ghostly trailer that almost never was. At the same time, the memorial comic book powerfully reinforced the links between Spider-Man and the mourning citizens of New York. With those connections in mind, the following section examines the two *Spider-Man* films and their role as a cinematic site of artificial mourning.

Artificial Mourning: Spider-Man, Special Effects and September 11th

From the outset, it is worth reinforcing that in arguing that the *Spider-Man* films enact a mode of artificial mourning, this is not suggesting that cinematic mourning is in any way

'less' than trauma in the 'real' world. Rather, artificial mourning is consistent with the argument put forward by this study that our artificialities are at the intersection of embodiment and technology in a manner which directly challenges and expands the notion of subjectivity by showing its connectedness with elements traditionally beyond the boundaries of the liberal humanist subject. Building on the previous chapter, in the case of the *Spider-Man* films, this section argues that both movies situate the character and his two main nemeses as artificial people within a New York facilitated by special effects. While clearly open to interpretation and exhibiting the radical ambiguities characteristic of science fiction cinema, the *Spider-Man* films through their CGI, their narratives and their characters, provoke dialogues beyond the bounds of simple commodity culture and are thus situated as part of an artificial cinema. Moreover, both films contain considerable dialogue with the West's Long September, allegorically engaging with the issues of foremost political concern in the years following the attacks on New York. These negotiations, again, are not exclusively at the level of narrative, but also are realised through the connectivity of Peter Parker and Spider-Man with technologies and with the digital special effects of the visualised New York cityscape itself.

The graphics forming the title sequence for the first *Spider-Man* film, released in the American summer of 2002, immediately link Spider-Man and the sprawling metropolitan cityscape of New York. The images in the credits begin with spider webs as vectors, outlining the elements of Spider-Man's visualised corporeality, then showing the reds and blues of Spider-Man's upper body, bent with head bowed. The sequence

Figure 31. The opening credits of the first *Spider-Man* film showing Spider-Man's gridded and costumed surface. [*Spider-Man*]

Figure 32. Spider-Man disappearing into the New York cityscape which has the same grids, textures and colours as its iconic super-hero. [*Spider-Man*]

Figure 33. The city of New York in the reds and blues of Spider-Man's costume. [*Spider-Man*]

then shifts to showing Spider-Man crawling along a skyscraper rendered in the same colours, hues and with similar grid lines. Indeed, the similarity between Spider-Man's CGI costume and the visualised city almost suggests that the same grid lines at one point form the city, and at another are stretched around a human, forming a heroic costume. Significantly, as viewers see the last few images of the city, the buildings share the blues and blacks of Spider-Man's costume and reflect the reds in the windows, but a red glow is also visible on the horizon, a vista New York experienced the night the Twin Towers fell. These opening credits immediately link the superhero and the cityscape, intertwining their visual depictions and positing a shared ontology through technology and implicit pain and loss. Spiderman, from the outset, embodies New York.

In an updated version of Spider-Man's origin story, Peter Parker and his high school class are visiting one of Columbia University's research facilities. Peter's geek credentials are displayed as he almost drools to his friend Harry Osborne, "That's the largest electron microscope on the Eastern Seaboard." The class is introduced to a series of genetically engineered super-spiders which combine the skills of various species of spider. Rather than the 1960s technological bugbear of radiation, in the early twenty-first century as Peter Parker is accidentally bitten by one of the super-spiders, the origins of Spider-Man are linked with one of the most contentious contemporary technologies, genetic engineering. For the inattentive viewer, the computer screens behind Peter during this scene labour the exposition, displaying recombinant DNA and flashing the words 'New Species.' When Peter awakens the next day after a feverish night, he discovers the he is stronger, faster and can shoot webbing from glands in his wrists.

Spider-Man is thus a fusion of technologies and embodiment, a carnal superhero whose technological origins are as much cross-species as they are digital. Nevertheless, the synthesis of origins, technologies and species clearly mark Spider-Man as an artificial person.

It is worth noting, however, that the film does not unproblematically embrace new technologies, as it also emphasises the difficulties entailed in adapting to the challenges of technological change. In the first scene with Peter Parker's Uncle Ben, viewers discover that Ben has been fired after a lifetime's employment as an electrician. Looking through the employment section of the newspaper, he laments that the advertisements all seek experience with digital technologies:

> Computer salesman, computer engineer, computer analyst – My lord, even the computers need analysts these days! I'm too old for computers.

The technologies that facilitated the artificial origins of Spider-Man also hamper Peter's family. More significantly in terms of the symbolic links with technology, once Peter Parker has become Spider-Man, he no longer visibly engages with digital technologies. Despite being a science whiz and showing knowledge of the latest technologies, Peter never wields anything more advanced than a manual camera in either *Spider-Man* film. While this change is at odds with Peter's characterization in the comic books, it does emphasise that for Spider-Man technologies are an inescapable part of life, but their utility and politics are determined through use, and are not intrinsic. Moreover, while Spider-Man does not diegetically use digital technologies, viewers would be well aware that in many scenes Spider-Man is the product of the latest CGI techniques and thus *is* a

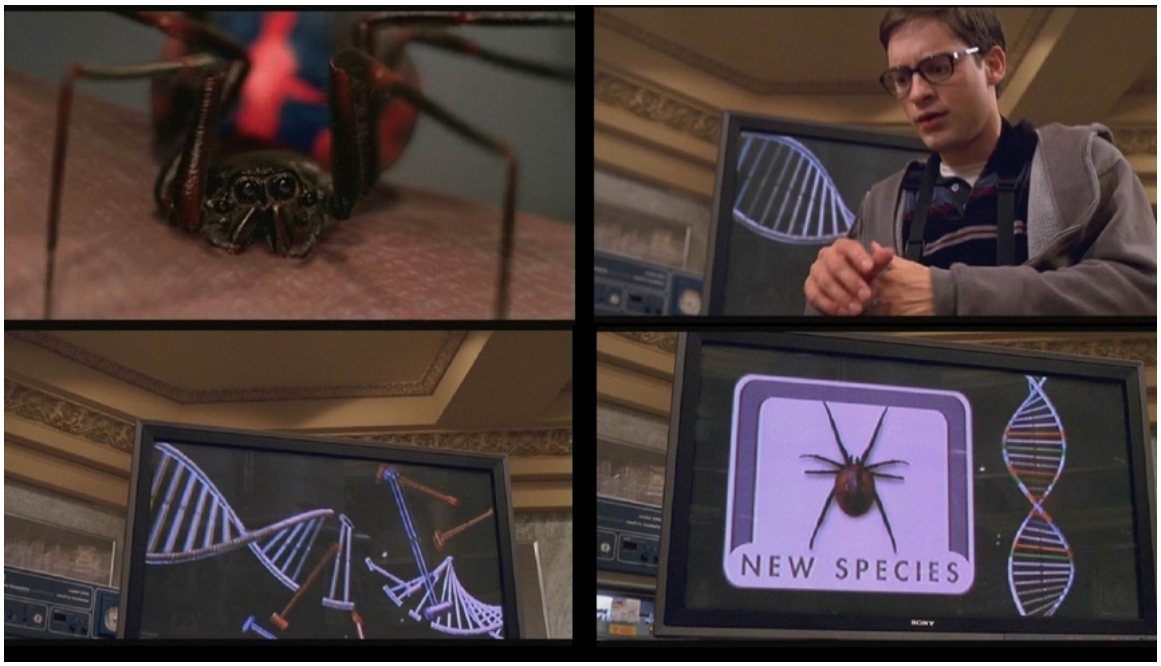

Figure 34. Peter Parker is bitten by a genetically-enhanced super-spider as the computer screens provide none too subtle exposition. [*Spider-Man*]

Figure 35. Peter Parker looks through the lens of his camera to see the sensational headlines of the *Daily Bugle* alongside Parker's own photographs. [*Spider-Man*]

digital technology. Although updating his hybrid origins, the films implicitly link Spider-Man and technology through the character's diegetic ontology and the CGI facilitating Spider-Man's amazing abilities, but rather than overemphasising the character's technological status, his lack of visible engagement with advanced technologies situates technology as a part of everyday life. Spider-Man is about a balance between the growing pains of adolescence, responsibility and an amazing and simultaneously banal engagement with technology. In effect, the films epistemologically situate artificial people such as Spider-Man not as differentiated 'technological' entities, but rather, as simply one of the eight million citizens of New York City.

Just as Peter Parker became Spider-Man through engagement with the latest technologies, so too did his first nemesis, the Green Goblin. In *Spider-Man*, Norman Osborne, a millionaire businessman half-way between Donald Trump and Victor Frankenstein, is about to lose a massive military commission to create both military hardware and nanotechnological 'performance enhancers', designed to increase the abilities of humans in order to use their military devices. Despite their digital origins, performance enhancers sound like, and appear to function similarly to, steroids and other performance-enhancing drugs, a symbolism reinforced by the need to ingest the enhancers. However, given the disdain the *Spider-Man* comic books have historically shown toward drug use, their use is unsurprisingly not without dramatic consequences. When Osborne pushes human trials of the enhancers forward, using himself as the guinea pig, he develops a megalomaniac split-personality, steals the military tools

including bombs and a human-sized glider, and becomes the Green Goblin. The Goblin's visceral desires and disdain for human life are dark mirrors of Peter Parker's struggle to protect innocent life in the wake of his uncle's tragic death. In Slavoj Žizek's reflections on September 11th he argues that part of the horror of the attacks was that their incomprehensibility or otherness revealed a far deeper trauma, in that even in terms of terrorism, 'every feature attributed to the Other is already present at the very heart of the USA.'[15] If, as this chapter argues, *Spider-Man* offers an allegorical engagement with the trauma of September 11, it is highly significant that the Other that Spider-Man must defeat shares very similar origins: he is a New York citizen whose engagement with advanced technologies had unintended consequences, giving him abilities beyond the norms of everyday corporeality. In many ways, the battle between Spider-Man and the Green Goblin, both artificial people, is as much a battle between similarities as is between differences.

The *Spider-Man* films also present the relationship with media technologies as ambiguous and often problematic. Peter Parker gets his first financial break in New York by using a timer function to capture pictures of himself in action as Spider-Man and selling them to the disreputable newspaper *The Daily Bugle* and its enigmatic editor J. Jonah Jameson. Although Jameson is in some ways a sympathetic character, as editor of the *Bugle* he happily pays for Peter's images, but then completely ignores the context

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[15] Slavoj Žizek, *Welcome to the Desert of the Real*, London and New York, Verso, 2002, p. 43.

in which they were taken, adding his own sensationalised words and headings. While a picture is often said to be worth a thousand words, the *Bugle* shows that context can change which thousand words are heard. From a picture of Spider-Man simply scaling a wall, Jameson extracts a headline such as 'Big Apple Dreads Spider Bite!' As Marcia Landy, among others, has argued, the news media played a large role in both portraying and formulating the initial responses to September 11th.[16] Just as the news media footage of the Twin Towers collapsing were the only sanctioned images, the power of the media commentators who ran these segments were given considerable influence in shaping the national response. Moreover, after the US invaded Iraq in an incursion ostensibly justified by Saddam Hussein's terrorist ambitions and never-found weapons of mass destruction, months later the reflections on how the media built public support for this action led to some serious ethical questions being asked about journalistic integrity. In that context, *The Daily Bugle* is something of a symptom of irresponsible, sensationalist news media. In the first film this antagonism is disheartening for Peter, but the photographs pay the bills so he puts up with it. In *Spider-Man 2* the constant badgering from the press briefly sees Peter Parker decide to give up on superheroism altogether. Thus, the power and influence of media is both highlighted and, to an extent, critiqued in the *Spider-Man* films (and in the preceding comic books).

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[16] Marcia Landy, "'America under Attack': Pearl Harbor, 9/11, and History in the Media," *Film and Television after 9/11*. Ed. Wheeler, pp. 79-100.

One of the core links facilitating the allegorical utility of the films is the entwining of the figure of Spider-Man and the New York cityscape. Earlier, Spider-Man's ties to the city were explored as enacted in the comic books, but through CGI and other techniques, the films further amplify these links. As feminist philosopher Elizabeth Grosz argues, the links between corporeality and cities runs deep:

> The body, however, is not distinct from the city for they are mutually defining. … there may be an isomorphism between the body and city. But it is not a mirroring of nature in artifice; rather, there is a two-way linkage that could be defined as an *interface*. What I am suggesting is a model of the relations between bodies and cities that sees them, not as megalithic total entities, but as assemblages or collections of parts, capable of crossing the thresholds between substances to form linkages, machines, provisional and often temporary sub- or micro-groupings. This model is practical, based on the productivity of bodies and cities in defining and establishing each other. It is not a holistic view, one that would stress the unity and integration of city and body, their "ecological balance." Rather, their interrelations involve a fundamentally disunified series of systems, a series of disparate flows, energies, events, or entities, bringing together or drawing apart their more or less temporary alignments.[17]

As the opening titles attested, Spider-Man and New York share a similar grid-system, one delineating urban space, while the other is wrapped around a corporeal superhero. Building on Grosz's arguments, there are numerous other links between Spider-Man and the city. For example, when Peter first decides to accept the mantle of Spider-Man as a crimefighter and moves to New York, the initial appearance of the iconic costume seemingly emerges from the heart of the city itself. With a camera pointing upward from street level, along a busy street ending with the Empire State Building, Spider-Man bursts from the city itself, swinging down as if the streets have conjured their own

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[17] Elizabeth Grosz, *Space, Time and Perversion: The Politics of Bodies*, London and New York, Allen & Unwin, 1995, p. 108.

embodied figure. Moreover, just as Spider-Man is frequently a CGI character, at times so, too, is the city. Many of the city streets were composited from existing footage and digital simulations and some of the live-action photography of New York took place on the streets of Los Angeles. The New York of the *Spider-Man* films is thus the New York of imagination, the city whose iconography most loudly speaks of the American Dream. For Spider-Man, the city is an artificial, tactical space being navigated and interfaced with by an artificial person. It is this synthesis between the idealised New York and Spider-Man which so powerfully and symbolically links the two.

After Spider-Man first bursts into New York, a montage of his fight against crime is seen and is followed by some candid on-the-street style interviews with the city's residents who oscillate from recognising a hero to being deeply suspicious of this seemingly non-human entity. At the end of these interviews, the film cuts to an image of Spider-Man with the New York skyline reflecting in his costumed eyes. This image is extremely significant because clearly visible in that reflected city are the Twin Towers, still standing tall. Indeed, a comparison with the withdrawn original trailer for the film shows that this is exactly the same effects shot as was used in the trailer. For two full seconds, or roughly fifty individually rendered CGI frames, the Twin Towers are reflected in the eyes of New York's own superhero. Despite the World Trade Centre being absent from the film's narrative *per se*, this CGI homage to the fallen Towers clearly establishes the ties between Spider-Man and New York both before and after September 11th 2001. Moreover, the use of CGI allowed the filmmakers to pay tribute to the Towers in a manner consistent with the comic books' meaningful engagement in

Figure 36. Spider-Man emerges fully formed from the New York skyline, for the first time in full costume. [*Spider-Man*]

Figure 37. The Twin Towers 'reflected' in Spider-Man's eyes (the eyes of New York) after his introductory montage. [*Spider-Man*]

the special tribute issue, but also in a fashion ostensibly recognising the cultural taboo against the Towers being represented. The Towers survive inscribed onto the body of Spider-Man, the embodied, iconic superhero of New York. Moreover, the image being the same one from the withdrawn original trailer directly links both the narrative and the production of the *Spider-Man* film to the tragedy suffered by New York and its citizens.

While the *Spider-Man* films are clearly set in a science fictional world with superheroes and supervillains, the films nevertheless engage in a considerable fashion with the historical realities of September 11th and its immediate cultural aftermath. In addressing films which engage directly with historical events, Sean Cubitt points out that,

> History films invite us to inhabit our own societies, cultures and nations, but to do so they must construct all three. … Historical film presents as complete, at origin, what it seeks to create.[18]

History in cinema is thus always a reconstructing and visioning, never that impossibly historical dream of a reflection of unmediated events. Moreover, in analysing films which attempt to change or challenge generally accepted versions of historical events, Sean Cubitt argues that these 'reversionary movies' often drawn on older models of representation and depiction, such as Japanese graphic arts.[19] In the case of *Spider-Man*, the films do not seek to re-vision the historical event of September 11th, but rather address the West's Long September not just metaphorically but in an allegorical manner which, to some extent, attempts to 'remake the past' of the Marvel comic book

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[18] Sean Cubitt, *The Cinema Effect*, Cambridge, Mass. and London, MIT Press, 2004, p. 301.
[19] Cubitt, *The Cinema Effect*, p. 321.

franchise. Following that line, the most significant re-characterisation in adapting the comics for the cinema was the character of Mary-Jane Watson.

In the comic books, Peter Parker fell in love with Mary-Jane only after the relationship with his first true love, Gwen Stacy, ended tragically with her shocking uncomic-like death. However, as Marvel's editor-in-chief Joe Quesada notes,

> when they created the Mary-Jane character for the movie, it's pretty obvious that there's a mixture of Gwen and Mary-Jane within that character. They sort of amalgamated the two girls into one sort of idealized character.[20]

Rather than the complication of two love interests in the space of a two-hour film, in adapting the comic for the silver screen the writers and director added elements of Gwen Stacy to the character of Mary-Jane. However, when Mary-Jane is kidnapped by the Green Goblin and held hostage atop a New York bridge, many viewers would immediately have feared Mary-Jane would actually die because this scene is a replica of the moment when Gwen Stacy died in the comic books, a moment whose tragedy reshaped the universe of Marvel superheroes. Moreover, the Goblin gives Spider-Man a choice between rushing to save either Mary-Jane or a tram-car full of children which is about to plummet to the ground since its cable has been cut. Luckily for Peter Parker, he can think outside of binaries and manages to catch the falling Mary-Jane and snag the cable-car before the children die. While a well choreographed rescue scene in itself, the powerful significance of this sequence in terms of allegorically engaging with

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[20] In a featurette entitled 'Interwoven: The Women of Spider-Man' featured with the DVD release of *Spider-Man 2*.

September 11th is in the revisioning of the *Spider-Man* films, the new Gwen Stacy does not die.[21] Rather than revisioning the 'real' politics outside of the fictional franchise, the films revision the Marvel universe and redeploy a fictional moment of tragedy deeply linked to New York. After heightening the fear of many viewers that *Spider-Man* would visualise the comic book's most shocking tragedy, the films actually revision a far more optimistic city where the superhero can save the damsel in distress. At an allegorical level, this shift in the adaptation of the comics imbues New York with an optimism not so much about erasing history as renegotiating a cityscape of the present less shrouded in mourning. The artificial spaces of a revisioned New York and artificial personhood of a CGI Spider-Man facilitate a type of artificial mourning which both acknowledges New York's wounds but also points to a more hopeful future (even if located by, to some extent, revisioning a fictional past).

The links between the *Spider-Man* film and New York's citizens are also explored in an overstated manner during the last fight sequences with the Green Goblin. As Spider-Man rescues Mary-Jane and the children in the cable car, the Goblin's attack is interrupted by a group of ordinary New York citizens who throw bricks and stones at the Goblin; one screams out "You mess with Spidey, you messing with New York!" while another man yells, "You mess with one of us, you mess with all of us." In this scene, the

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[21] Christopher J. Priest, a former editor of the *Spider-Man* comics, comments in "A Bug's Life: Spiderman Comes to the Big Screen," *View From the 27th Floor*, May 2002, http://phonogram.us/viewpoint/spider.htm, accessed 26 Aug 2004, that he felt that the film 'wimped out' by not killing off Mary Jane but suggests that a 'Spider-Man fan knows what actually happened on that bridge.'

film visualises both the direct link between Spider-Man and everyday New York citizens, and presents the idealised viewer of the film who is situated as someone experiencing a deep connection with Spider-Man in his battle with the Goblin and, more broadly, against those who would hurt New York. These feelings and images continue when the Goblin propels Spider-Man into a building, knocking it to the ground as Spider-Man struggles to regain his composure, his mask now shredded, revealing the ordinary man under the mask. As the conflict reaches resolution amongst the rubble of fallen buildings and with Peter Parker's face apparent alongside the remains of his Spider-Man mask, this scene directly links to the special post-September 11 issue of *Amazing Spider-Man* where Peter Parker's link to the mourning New Yorkers was show when he partially lifted his mask during the relief efforts. Following these powerful but blatant symbolic links, after the Goblin is defeated it is similarly telling that the last visual effects in the film show Spider-Man viewing New York from atop the Empire State Building and in the background, visible but ethereal and almost ghostly, the figures of the Twin Towers can be seen for a few moments on the distant horizon before Spider-Man swings back into his city with the American flag fluttering proudly in the background. These symbols serve to reinforce the links between Spider-Man, special effects and the New York cityscape, facilitating an artificial mourning which addresses September 11th by reinvigorating certain American icons, but in the midst of a storyline which continually reinforces the mantra 'with great power, comes great responsibility.'

Figure 38. During battle with the Green Goblin, Spider-Man, the hero, and Peter Parker, the everyman, are both equally visible. [*Spider-Man*]

Figure 39. In the closing shot of the first film, Spider-Man surveys the New York cityscape with the ghosts of the Twin Towers on the distant horizon. [*Spider-Man*]

In the sequel, *Spider-Man 2* both the plot and the central supervillain are substantially more complicated. Whereas Normal Osborne was an arrogant capitalist who developed weapons for the military even before his transformation into the Green Goblin, in the second film Doctor Otto Octavius is actually one of Peter Parker's personal heroes. Octavius thinks he has found a way to create a stable fusion reaction that would create a functionally limitless energy source. Before his public test of the technology, Octavius meets with Peter Parker who is writing a paper on the research at university. During their conversation, Octavius reflects on the role of the scientist, telling Peter "Being brilliant's not enough young man. You have to work hard. Intelligence is not a privilege, it's a gift. And you use it for the good of mankind." Octavius thus appears to be a genius-scientist with the best of intentions, albeit with an obviously patriarchal overconfidence and arrogance about the abilities of science and technology. His character is a reflection of Albert Einstein with his expansive intellect but cultural blindness in terms of the potential dark side of the technologies he has created. In order to successfully stabilise his fusion reaction, Octavius has constructed four artificial limbs which are metallic appendages and, owing to their difficult tasks, actually have their own artificial intelligence to assist in the processes. In the press conference preceding the first fusion test, Octavius explains the use of his artificially intelligent limbs:

> *Octavius:* These smart arms are controlled by my brain through a neural link. Nanowires feed directly into my cerebellum, allowing me to use these arms to control fusion reaction in an environment no human hand could enter.
> *Reporter:* Doctor, if the artificial intelligence in the arms is advanced as you suggest, couldn't that make you vulnerable to them?

> *Octavius:* How right you are. Which is why I developed this inhibitor chip to protect my higher brain function. It means I maintain control of these arms, instead of them controlling me.

Octavius' artificial limbs thus contain a physical version of Asimov's three laws of robotics inasmuch as the inhibitor chip keeps the intelligence of the human user dominant, implicitly restraining the artificial intelligence of the manipulator arms and highlighting the possibility that the limbs may prove influential in the right circumstances. When the experiment goes awry, Octavius' wife and collaborator is killed, and the arms are fused to his body, just as the inhibitor chip is destroyed. In a state of shock, when rushed to hospital Octavius' arms take defensive action when surgeons try to cut them away from the doctor's body; instead, the arms kill the entire medical team and, to some extent, then seem to strongly influence the decisions and actions made by 'Doctor Octopus.' The corporeal line between 'Otto Octavius' and the intelligent limbs shatters and now multiple voices influence the actions of this one character. Octavius is clearly an artificial person through his hybridisation of technologies, artificial intelligence, human intelligence and physical corporeality. However, even as a villain his motives are still driven by the idea of completing his work, although that now becomes a threat to the city since Doctor Octopus has already proven unable to control the "power of the sun in the palm of my hand."

Also in the second film, Peter Parker's role and faith in the ideal of heroics comes into question. Having been hounded by the media and after giving up his dream of ever being in a relationship with Mary-Jane, Peter's confidence falters and his spider-powers seem to disappear. Peter develops symptoms of heroic impotence, losing his strength

and agility, not to mention the ability to shoot webbing from his corporeal form. In the first film, Spider-Man is faced with a burning building from which he must rescue a baby. In this symbolic re-enactment of September 11th, Spider-Man is shown alongside the firefighters and police officers of New York, sharing their heroism and their links with the city. However, in *Spider-Man 2*, in an attempted act of heroism, a Peter Parker without the benefit of spider-powers is faced with a very similar scenario and while he manages to rescue a child, he is told by thankful firefighters that someone else was burnt to death on the fourth floor; a death Spider-Man might have prevented, but Peter Parker could not. Significantly, these performance issues and confused ideas of heroism occur in a social context where America's continued presence in Iraq, alongside a widespread questioning of the political and ethical justification of the incursion, have led to serious ambivalence about the role and justification of the military, just as occurred in relation to the Vietnam War. Spider-Man's difficulties are thus linked to a broader social world where masculinity and heroism are in a symbolic state of confusion. Moreover, in comparing the burning building scenes from the two films, the links between heroism and September 11th are also provocatively challenged. However, when both the city and Mary-Jane are put in mortal peril, Peter appears to spring back into heroic action to confront the now misguided and, at times, evil Doctor Octopus.

The major fight scenes between Spider-Man and Doctor Octopus take place in, on and around a New York train as it hurtles along on a line which is unfinished (possibly being reconstructed after September 11th) and ends in a sheer plummet from a number of storeys above ground-level. In an effort to distract Spider-Man, Doctor Octopus sets the

Figures 40. Spider-Man, alongside the police and firefighters, rescues a swaddled infant from a burning tower in the centre of New York. [*Spider-Man*]

Figure 41. Spider-Man confronts another burning building in New York after seemingly losing his super-powers. [*Spider-Man 2*]

Figure 42. Mary-Jane runs from her fiancé, symbolically joining with New York as she runs through central park to Peter Parker's side. [*Spider-Man 2*]

train to continually accelerate and then destroys the controls, leaving the train and its passengers hurtling towards their doom. During the fight, Spider-Man has fiery embers thrown onto his mask, and has to pull it off, revealing Peter Parker's face to everyone on the train. Despite this, Peter immediately sets to work stopping the train's course, but fails in several attempts. Finally, using himself as the corporeal core, Peter shoots out many lines of webbing and holds tight to these at the front of the train, trying to use his strength and the webbing as a counter-force and bring it to a halt. During this scene, a maskless Peter has his arms spread wide with wounds and tears appearing as he struggles and screams under the enormous pressure. While he is successful, Peter collapses in a scene borrowing from the ubiquitous imagery of the Christian crucifixion. Having quite literally sacrificed himself for the people, Peter's limp form is cradled by the passengers and passed along the train-car above the heads of the people, before being gently placed on the ground. One passenger comments, "He's just a kid, no older than my son," and Peter's eyes flicker open, basked in the love of the people he has saved. After Peter realises he has no mask, another passenger reassures him, "it's alright," and Peter Parker and Spider-Man become even more deeply imbricated with the ordinary citizens of New York, having shared Peter's secret. In his symbolic crucifixion and rebirth, Peter rediscovers a new masculinity, but not of the sort seen in the transition from excessive to ironic masculinity between *Terminator 2* and *Terminator 3*. Nor is this the staunchly individual masculinity of liberal humanism, but rather a masculine and heroic identity tied to a sense of community and to a links with a city still in the processes of reconfiguring its existence in its ongoing Long September. When two small boys hand Peter back the Spider-Man mask, he is renewed, having overcome a

Figure 43. Peter Parker/Spider-Man rescues a train full of New York citizens from destruction in an act of self-sacrifice and symbolic crucifixion. [*Spider-Man 2*]

Figure 44. After Peter Parker/Spider-Man stops the train and collapses, his lifeless form is caught by the citizens of New York. [*Spider-Man 2*]

Figure 45. Peter Parker/Spider-Man's body is passed above the crowd of New Yorkers, both lifting and caressing his form. [*Spider-Man 2*]

crisis of heroism. In broader terms, Spider-Man's heroism reflects a new masculinity that has been reconfigured in the face of cultural disillusionment with the military and war in general. During his symbolic rebirth at the front of that icon of modernist masculinity, the train, Spider-Man becomes a hero who has doubted, alongside many Americans in the face of the Afghanistan and Iraq incursions, but also discovered a new, less rigid, masculinity tied to community, the city and everyday life. Moreover, this new masculinity is facilitated by the technological hybridisation which allows Peter Parker to survive his ordeal in saving the passengers, if not entirely the train itself, and is inscribed onto Peter's corporeal form.

While the bulk of analysis thus far has focused on the masculine heroes and villains, it is also significant that in the second film Mary-Jane Watson becomes considerably more than just a passive love-interest or motivation for Spider-Man's actions (although she does, at times, still perform that role). During Peter's moments of heroic doubt and impotence, part of his unhappiness comes from the presumption that it would be too dangerous to be involved with Mary-Jane while still a superhero – that would inevitably invite supervillains, who almost always attack a hero's loved ones. Even when Spider-Man discovers a new masculinity after his symbolic rebirth, he still presumes that it is *his* responsibility to protect Mary-Jane either as lover or hero, but never both.[22] However, at the end of the film Mary-Jane is faced with the knowledge that Peter is

[22] Bukatman, *Matters of Gravity*, p. 65, points out that superhero stories tend either to position women as love interests for male heroes or to create female heroes who are in some way powerfully marked by absence, such as the Invisible Woman in the Fantastic Four or Wonder Woman and her invisible jet.

Spider-Man just as she is about to marry someone else who she clearly does not love as much. Instead of marching down the aisle, Mary-Jane runs in her wedding dress through the heart of New York, heading to Peter's tiny apartment. In soft hazy lighting with streams of sunlight and doves in the background as she races through Central Park, Mary-Jane's choice is visually presented in a similar fashion to Katharine Ross's portrayal of Elaine Robinson in a classic coming-of-age film, *The Graduate*. Moreover, as Mary-Jane runs though New York, she is symbolically marrying the city itself as much as she is running to Peter Parker's side. Just as Elaine chooses to determine her own fate over the desires of her family, Mary-Jane makes her decision to be with Peter even if he thinks it is too dangerous. As Mary-Jane states:

> I know you think we can't be together. But can't you respect me enough to make my own decision? I know there'll be risks. But I want to face them with you. It's wrong that we should only be half alive, half of ourselves. I love you. So, here I am, standing in your doorway. I've always been standing in your doorway. Isn't it about time somebody saved your life?

While Mary-Jane is choosing a supportive role, in line with a traditional view of femininity, she is also making that decision on her own terms, giving up a more conventional marriage, and asserting her own right to choose. Peter, rather than patronisingly making Mary-Jane's decision for her, is forced to think outside the final binary of partner *or* hero and gleefully accepts Mary-Jane's decision. While their reconfigured masculinity and femininity are very conventional in some senses, Peter and Mary-Jane also highlight newly gendered identities which escape many of the binaries traditionally bounding gender identity. Implicit, too, is the idea that a distinctly corporeal masculine superhero and an assertive feminine partner are entirely at home in

the new possibilities emerging as New York's citizens begin to construct themselves outside of the shadow of America's Long September.

In the final confrontation between Spider-Man and Doctor Octopus, Peter's new masculinity is on display, as is a reconfigured sense of heroism which looks beyond the binary of good and evil, finding many shades of grey. In the finale, Doctor Octopus has rebuilt his fusion generator and has activated it, even as Spider-Man fights to try and turn it off before the enormous power is unwittingly unleashed and destroys the city. After trading blows, Spider-Man knocks a power line onto Doctor Octopus who is electrocuted and lies, greatly weakened, on the floor, only for Spider-Man to discover that the fusion reaction is now self-sustaining and cannot be conventionally disconnected. Realising the futility of violence, Spider-Man pulls off his mask and reveals his mundane identity as Peter Parker. He appeals to Octavius who seems more balanced as both he and his artificial limbs are weak after their ordeal:

> *Peter:* You once spoke to me about intelligence. That it was a gift to be used for the good of mankind.
> *Octavius:* A privilege.
> *Peter:* These things have turned you into something you're not. Don't listen to them.
> *Octavius:* It was my dream.

While Peter is ready to blame the artificial intelligence for Doctor Octopus' actions, Octavius points out that the artificiality was always working in tandem with his desires, not against them. However, after Peter's impassioned plea, Octavius and the artificial intelligence with which he has merged reach a decision and tell Peter that they will destroy the fusion generator by dragging it to the bottom of the river. In that moment,

any clear cut distinction between good and evil falls away. So, too, does any remaining boundary between embodiment and artificiality, as Doctor Octopus is a hybrid artificially intelligent/artificial person whose sacrifice highlights the power of conversations and words over and above violence and conflict. Rather than Spider-Man saving the day through heroic conflict, Peter Parker and Spider-Man are both present as Peter's face is revealed as he talks Octavius into seeing the errors he has made. Thus in conversations which entail corporeality and technology, good and evil, and conflict and resolution, Spider-Man and Peter Parker save the day by convincing the artificial nexus that is Doctor Octopus to sacrifice himself for the sake of the citizens and city of New York. At a broader level, this finale highlights the power of conversation over violence and points to the many connections between bodies, technologies and meaning which all play a part in the cultural nexus of artificialities. Moreover, in thinking beyond binary divisions, Spider-Man and Doctor Octopus save New York City from a terrible disaster. Their actions and their emerging epistemologies facilitate an allegorical artificial mourning by which New York's, and the West's, Long September can be meaningfully addressed not so much in terms of vengeance, but through a culture of artificiality. More than anything else, this culture is about elements, individuals and entities once thought of as being antagonistic, or completely separate, coming together both in terms of conversations which can bridge or erase differences and, ultimately, rearticulate meaning as fundamentally intertwining, not separate.

Conclusion

In examining the rearticulation of the Spider-Man franchise and mythology from comic books to feature films, this chapter has highlighted the inextricable intertwining of corporeal embodiment and technologies in a manner which links subjects, bodies, cities and politics in a way which challenges and blurs the boundaries of each of those interfacing concepts. In *Spider-Man* and *Spider-Man 2*, the cinematic New York City is shown to be an artificial space complete with tactical potential. The superheroes and supervillains are all artificial people themselves and their relationship with technology becomes increasingly evident in the sequel, with Doctor Octopus not only an artificial person, but a community of artificiality in himself or themselves. He hybridises with artificial intelligences, thus building on and expanding the narratives of artificial life and artificial intelligence. In a similar fashion to the previous chapter, the *Spider-Man* films are part of an artificial cinema which re-engages with politics both global and local in a meaningful way. Sean Cubitt's desire for a cinema in which 'the communicative seizes as ground the primacy of relations over objects' is realised in *Spider-Man 2* where the finale sees the power of conversation save New York City from destruction.[23]

During the West's Long September, the *Spider-Man* films facilitate a mode of artificial mourning which both mourns for the lost Twin Towers and the lost simplicity of a world not focused on terrorism. However, mourning is not so much about the past as it is

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[23] Cubitt, *The Cinema Effect*, p. 364.

about addressing present trauma in order to best shape the future. Moreover, all of these aspects combine to illustrate an artificial culture where the inextricable intertwining of corporeal, fleshy embodiment and informatic, digital technology provocatively destabilises and makes permeable conceptual and material boundaries. Although most clearly visible in the speculative texts of Western culture, the artificial has considerable importance beyond those fertile and imaginative seeds. The effects of artificialities may not be the same or even similar in differing contexts, but the core of the artificial, the provocative need to re-negotiate and converse about the many connections between technology and embodiment and thus between subjects, objects and politics, is globally relevant and globally meaningful. Our artificial conversations may very well help shape the future.

ARTIFICIAL CONCLUSIONS

In the symbiotic relationships between technology, embodiment and subjectivity tentatively mapped in this exploration of artificialities, all three intertwining fields are broad enough to remain in continual debate, yet the 'human subject' remains the most contentious concept of all. Over twenty years ago, Donna Haraway's 'Manifesto for Cyborgs' challenged the coherence of existing notions of the subject by positioning subjectivity within the same ontological spectrum as technology. In doing so, any absolute epistemological distinction between human and machine, as well as subject and (at least technological) object became logically inconsistent. Nor was Haraway alone in interrogating the coherence of the subject; critical thinking and philosophy stretching across feminism, postmodernism, queer studies, postcolonial studies and many other fields all challenged notions of subjectivity in various ways. While the liberal humanist subject, whose coherent existence began during the Renaissance and Enlightenment periods of Western history, has long since been revealed as a contextual and historical construction, that construct is still the presumed focal point for the majority of debates regarding ethics, politics and representation. The tension produced in simultaneously challenging existing notions of the subject, while still attempting to reposition other entities within the field of subjectivity in order to legitimate their kinship with humanity, has been a consistent undercurrent within this project. Haraway, whose work is far more entrenched in existing discourses of scientific inquiry, found that it was so difficult to jettison terms such as objectivity, truth and knowledge, that a more useful tactic, at times, was to resituate these terms within contextual rather than universal frameworks. In

challenging scientific and other perspectives to contemplate the idea that 'objectivity cannot be about fixed vision', Haraway argued

> for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims.[1]

In so doing, Haraway facilitated further discussion and debate by developing *situated knowledges* which forced the presumed universal terms underlying many fields to be re-addressed even while those terms are still being usefully and regularly deployed. Building on Haraway's insights, the study of artificialities similarly leads to *situated subjects* where subjectivity is both relied upon as a means of political positioning that legitimates the embodied and technologised existence of certain entities, while at the same time the situated and contingent character of subjectivity leaves it open to continual debate. An idealised resolution of the tensions underlying the politics of cyborgs, posthumans and artificialities would see subjectivity either dissolve as a boundary concept that is no longer required, or expanded to such an extent that is bears, at most, a distant historical relationship to a concept which in the twentieth century proved, at times, so destructive and divisive. While such a resolution is distant enough to appear utopian from a contemporary political viewpoint, the only possible movement in that direction is through continual critical and contextual work, provoking and sustaining ongoing conversations about the symbiotic links between humanity, technology, embodiment and the politics underlying the connectivity of all three.

In the explorations of Artificial Intelligence (AI) in science fiction cinema, the imagined AIs in question consistently recognise their own sense of corporeal

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[1] Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature*, New York, Routledge, 1991, p. 195.

embodiment and contextual specificity. Although clearly not humanoid in shape, HAL, for example, is a conjunction of subjective thought and technologised embodiment encompassing the entirety of the spacecraft The Discovery. In later films, exemplified by the *Terminator* trilogy, AIs are represented in human-like bodies and in the bad-AI-turned-good plots of the second and third films, the specificities of embodiment and materiality prove important in maintaining and expanding links with human beings. However, far from being ignorant of the notions of subjectivity, the frequently feared moment when AIs turn on humanity is based on the presumption that AIs and intelligent machines will define subjectivity as narrowly as human beings once did. In that moment, AIs locate *their subjectivities* as central, and humans as irrational, non-technological objects to be feared, controlled, contained or destroyed. In the final *Terminator* film, it is the communication between subjects both human and artificial that allows humanity to survive (but, significantly, not prevent) the Judgement Day war.

The narratives of Artificial Life in Greg Egan's novels *Permutation City* and *Diaspora* provide extremely fertile spaces in which to explore the questions and ramifications provoked by digitised subjectivities. In the former novel, the juxtaposition of the ad hoc patchwork human-derived Copies and the bottom-up, 'evolved' artificial life Lambertians, highlights the importance and the power of embodiment even within a completely digital context. The colonial mentality that the Copies maintain in a digital realm ultimately proves terminal compared to indigenous artificial life-forms whose communication and contextual corporeality is fundamentally embodied and thus proves more coherent. In *Diaspora* the lessons of embodiment and the limits of subjectivity point to the importance of restraint in the

face of the theoretically endless replicability of information. Moreover, the 'bridger' characters, whose very philosophy is about carefully expanding their own subjectivity and embodiment to maintain meaningful dialogue and communication across different species, are a clear synecdoche for this project's aims in exploring various instantiations of the artificial.

William Gibson's Bridge trilogy contains an outline of Artificial Spaces in which subjectivity, embodiment and technology symbiotically intertwine in a manner which can offer, at times, the tactical potential for survival in contemporary society. While still speculative fiction, Gibson's novels do not stray very far from everyday life in the early twenty-first century. As such, the notion of Artificial Space is the concept most clearly visible in contemporary culture. During the rush hours in cities across the world, every train carriage is filled with people hybridised with their omnipresent iPods and mobile or cellular phones. These commuters are engaging with the same artificialities which are amplified in the virtual worlds, digital communication and tactically expanded subjectivity of 'Zona Rosa', a technologically extended subject whose existence allows a meaningful life for a young girl with severe physical disabilities. For Gibson the importance of embodiment is also boldly reinforced in the character of Rei Toei, an idoru who might be considered the first indigenous lifeform of artificial space, and her deepest desire being to reach a fleshy, corporeal form. Rei's ultimate success at the end of *All Tomorrow's Parties* does not occur on the terms of existing notions of subjectivity, but rather challenges them radically as nanotechnology and informatics converge to produce multiple corporealities and subjectivities.

Focusing on Artificial People entails exploring contemporary Hollywood blockbusters and the increased symbiosis between bodies, technologies and subjects at both the levels of both narrative and production. In the *Matrix* films, artificial people include both broadly human and digital entities whose shared philosophy of mutual evolution and peaceful co-existence literalises a symbiotic rather than parasitic relationship. Moreover, the links between artificial people points to the depths of bodily interiority, not just endless surfaces. In the latter two *Matrix* films, the weight of September 11 bears heavily, and amidst the massive battles between computer generated imagery (CGI), the speculative plotting posits situating the blame and the responsibility for overcoming the human/machine conflict equally on the metaphoric shoulders of humanity and the machine world. Both the 'bullet time' special effects in *The Matrix* films and a host of production techniques in *The Lord of the Rings* trilogy highlight filmmaking trajectories which focus on getting more and more interaction between embodied acting subjects and visualising informatic processes. The Massive software system even allows artificial life to be cast as extras in the many battle scenes set in Middle Earth. In realising the character of Gollum, the corporeality of Andy Serkis and many informatic mapping and visualising tools of Weta Digital combine to produce an artificial person whose existence is an iconic representation of the artificial. Gollum is the state-of-the-art intersection of material and digital technologies whose realisation relies on embodied meaning as their organisational framework. At the levels of narrative and production, the early twenty-first century Hollywood blockbusters thus show promising signs of re-initialising a cinema centred on communication and provocation which Sean Cubitt argues was lost in a late twentieth century cinema effect ruled exclusively by the logic of commodity culture.

As the section on Artificial People makes evident, even though this project has divided chapters along the ostensible lines of specific media—literature or cinema—this distinction is increasingly arbitrary as production is happening across media types at the level of franchises which encompass generic borrowings across multiple media and genres, source material from literature, film and videogames, and draws upon production techniques ranging from traditional writing and drawing through to casting and creating artificial life in supporting roles. In *My Mother Was a Computer*, N. Katherine Hayles recently expanded her exploration of posthumanism through a more consistent focus on digital subjects. In that analysis, Hayles posits the useful term 'intermediation' to describe the shifting texts she investigates. In comparison to Bolter and Grusin's oft-cited concept 'remediation'[2], Hayles argues:

> "intermediation" is more faithful to the spirit of multiple causality in emphasizing interactions among media. … I would rather use the lesser known "intermediation" (which, being not as well known, is more open to new interpretations). To make the term more useful for my purposes, I want to expand its denotations to include interactions between systems of representations, particularly language and code, as well as interactions between modes of representation, particularly analog and digital. Perhaps most importantly, "intermediation" also denotes mediating interfaces connecting humans with the intelligent machines that are our collaborators in making, storing, and transmitting informational processes and objects.[3]

The emphasis on spaces between media as much as different media types, as well the emphasis on the interfacing points between technology and subjectivity makes intermediation an ideal term to describe the operations and articulations which I have collectively labelled artificialities. The movement between different speculative instantiations of the artificial has multiple points of contact and provokes many

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[2] David J. Bolter and Richard Grusin, *Remediation: Understanding New Media,* Cambridge, MIT Press, 1999.
[3] N. Katherine Hayles, *My Mother Was a Computer: Digital Subjects and Literary Texts*, Chicago and London, University Of Chicago Press, 2005, p. 33.

different conversations about the connectivity of bodies, technologies and the ever-expanding realm of subjectivities. Similarly, while the speculative texts chosen in this study are useful starting points for conversations about artificialities, these discussions do not posit texts as meaningful by themselves, but contextually. As Hayles more eloquently argues the point:

> we should conceptualize texts as clustered in assemblages whose dynamics emerge from all the texts participating in the cluster, without privileging one text as more "original" than any other.[4]

Following Hayles, the speculative texts facilitating the investigation of our artificialities are intermediations which highlight the importance of the conceptual questioning and conversations emerging from engagement with these texts over and above any primacy or boundedness of the texts themselves which are contextually useful and contingently meaningful.

Artificial Culture entails intermediations across the various elements of the *Spider-Man* franchise from comic books to silver screen and, in part, facilitates an allegorical engagement with September 11th that results in a tentative mode of artificial mourning. Importantly, not just superheroes, but also supervillains in the *Spider-Man* films are artificial people, emerging from the intersection of subjectivity, embodiment and technology within a New York cityscape which is inextricably tied to the processes of artificiality. Exhibiting the core characteristic of science fiction cinema—the ongoing ambiguities produced from simultaneous modes of speculation and spectacle—the films are both highly successful media products and contain an explicit critique of media, symbolised by the *Daily Bugle*. Similarly, Spider-Man to a large extent is the product of technology, but the character is rarely seen engaging

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[4] Hayles, *My Mother Was a Computer*, p. 9.

with anything more mechanical than a manual film camera. However, the films also highlight the breadth of artificialities; the names Spider-Man and Doctor Octopus, for example, purposefully points out that the implications of artificial culture are relevant in positioning all organic life, not just human beings. Spider-Man is a hybrid between different species of animal as much as between technology and subjectivity. Moreover, in the final showdown in *Spider-Man 2*, the confrontation between Spider-Man and Doctor Octopus is not one of violence, but one where the power of conversation and discussion provokes the supposed villain of the story to save New York from destruction. At an allegorical level, the power of conversation and communication between artificial people within an artificial culture is deeply tied to contemporary politics and may just be part of the means needed to save the world.

The study of the loose trajectories from artificial intelligence to artificial culture has stressed the interplay of meaning between subjects, bodies and technologies and for reasons of practicality has deliberately limited the discussion to the narratives of intermediating texts and their production. Nevertheless, the viewers and subjects who individually engage with speculative texts are themselves the primary site where meaning happens. The provocative conversations frequently referred to in exploring artificial culture are as much conversations between speculative texts and active viewers as they are between texts and analytical projects such as this thesis. The politics of media creation are fundamental to artificial culture so it is extremely relevant that active viewers are not just making meaning by engaging with texts, but rather following the patterns of media engagement and consumption earlier typified by fan cultures, digital technologies have also facilitated an artificial culture in which

the tools of participatory media and citizen journalism are broadly available. No longer are Hollywood studios alone in creating speculative texts; from the millions of online voices heard via blogs or podcasts to the increasing sophistication of machinima films made using videogame engines, the tools of production and the means for individuals to start even louder conversations about our artificialities are rapidly becoming accessible across the globe. The politics of citizen media are deeply tied to our artificialities.

Very briefly, I wish to mention two examples of artificiality from television series that have been remade from past franchises in 2005 and have fostered very broad responses from online communities and inspired a wealth of citizen media. In the late 1970s, *Battlestar Galactica* was a camp *Star Wars*-derived show about life on-board a military spacecraft whose passengers and crew include the last survivors of the human race due to genocidal battles with mechanical aliens called Cylons. However, in the resurrection and reimagination of the series in the early twenty-first century, the most significant change was the decision to make the Cylons not aliens, but our artificial progeny, intelligent machines evolved from those built by human labour. Moreover, the most advanced Cylons have taken embodied corporeal form and their reinitialised war with humanity is directed in large part by the religious beliefs the Cylons hold. The politics of artificiality are thus inextricably linked with ideas of embodiment and the politics of a contemporary culture where the so-called 'War on Terror' is in large part represented as being driven by religious beliefs. In the UK revival of *Doctor Who* a similar rewriting of the major villains posits the Daleks no longer as aliens, but as techno-organic hybrids built, in part, using human bodies. The Daleks, too, have found religion in the early twenty-first century:

piercing wails of 'Exterminate' are joined in 2005 by equally loud screams of 'Do not blaspheme!'[5] These shifts in the embodied, technologised others in the speculative texts of television reinforce the conclusion that confronting our artificialities is always already about conversations which are, in the broadest possible sense, about confronting ourselves and our politics in every meaningful sense.

While the implications of artificial culture and artificialities more broadly are relevant across existing boundaries of gender, ethnicity, sexuality, class and national identity, one of the notable limitations of this study has been its focus on predominantly mainstream Western speculative texts. The vast majority of central characters in the intermediating speculative texts analysed have either been white, male subjects or, in several less explicit cases such as HAL, patterning themselves most obviously on Western masculinities. Similarly, while there has been a large number of cultural, religious and mythological underpinnings to these texts, the image of a crucified and resurrected masculine hero has been encountered at several turns. In part, the Western-centric nature of these texts reflects the Western-centric concepts and history that artificialities consistently critique; liberal humanist thought and patriarchy are deeply intertwined and thus challenging one can often most meaningfully done by engaging with the symbolic representations of patriarchy in heroic masculine form. While the scope of this project has been limited and, of course, partial, any future work on the global implications of artificialities would need to begin by more explicitly addressing the thus far implicit utility of artificialities in addressing the politics of ethnicity, sexualities, class and national

[5] 'The Parting of the Ways', *Doctor Who*, BBC Productions, 2005.

identities in an era of globalisation. This project is the *beginning* of a conversation about artificial culture and the future, and the last words of this beginning leave the important questions of identity politics (for lack of a better term) hanging in the air, to be taken up in future critical conversations with and about artificialities.

Artificialities are evident in the shifting ideas of subjectivity, embodiment, corporeality and technologies, both digital and mechanical, at play in the intermediations of speculative texts across multiple media. From the existing concepts of artificial intelligence and artificial life through to the speculative categories of artificial space, artificial people and, collectively, artificial culture, artificialities tentatively mark cultural shifts toward an inclusive politics where embodiment and technology are an integral part of conceptualising subjectivity. Returning to the idea of *situated subjectivities*, tentatively mapping our artificialities leads to the powerful conclusion that *all conclusions are artificial* in the dual sense that meaningful resolutions need to simultaneously address subjects, bodies *and* technologies; and that all conclusions are the result of human construction and conversation, leaving them inevitably open for further debate. The contribution of the study of the loose trajectory of intermediations enveloping ideas from artificial intelligence to artificial culture is in beginning conversations and provoking further debate about the intertwining symbiosis of subjectivities, technologies and the specificities of embodiment. Our artificialities emerge from speculative and thus fictional texts, but their use is in helping existing subjects—you and I and everyone with whom we can converse—think about our speculative futures in which the boundaries between people, bodies and machines need not be boundaries at all.

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