Dark Euphoria
The Neo-Gothic Narrative of Millennial Technoculture

Mitch Goodwin
B.A. Creative Arts, B.A. (Hons)

Submitted in fulfilment of the requirements of the degree of Doctor of Philosophy
School of Humanities | Griffith University | Gold Coast | April 2014
... and here we twiddle in a world of computer glitz,

as the winds rise
and the seas rise
and the debts rise
and the terrorists rise
and the nukes tick.


Front cover image: Mitch Goodwin (2011) Panel #7 from the Dark Euphoria series (Goodwin, 2011)
Abstract

This is a project in two parts. The text presented here is the major component. This exegetical document provides the theoretical context for a series of media art works that were produced between 2011 and 2012 in response as much as in parallel to this analysis. The creative work, the online media assemblage *Dark Euphoria: Unclassified Media* (archived at http://darkeuphoria.info), should be seen in a non-traditional sense – a research-led practice component – contextualised by the broader theoretical narrative.

Together, these two components produce a visual communication analysis of historical events, cultural artefacts and media art and the artists who produce them to reveal the nature, attraction and power of the dark euphoric temperament inherent in millennial technoculture. It is important to note however that this is a particular type of exegetical response not a reflective exegesis. This is not an analysis of my practice – the history or technique – rather this is an analysis of the context that informs that practice. Yet this text does include a discussion of several of my key works in relation to specific issues unpacked by the broader thesis and also in relation to the work by other media artists who explore similar territory.

This text explores the recent history of western technoculture and the corporate and political myth making associated with network technology, techno-futurist marketing, consumer electronics and mass media production. It questions how the image constructs of corporate advertising – especially those which promote communication technologies and services – have perpetuated the glossy myth of a technological Utopia, commonly associated with notions of *western progress*. Using advances in machine intelligence, ubiquitous computing, and personal communication apparatus to facilitate this narrative these marketeers have blended science fiction fantasy with near future projections to author a false reality. Simultaneously this project responds to the cinematic fictions of filmmakers, media artists and visual communication designers who have summoned a far more dystopian vision of our future selves and thereby forging a dark visual aesthetic in contemporary media culture.

The aim of this project then is to answer the following by way of narrative construct, theoretical analysis and creative endeavour: What effect has the 20th century futurist narrative of technological Utopianism (and therefore its neo-gothic Dystopian mirror) had on the emergence of a
new contemporary digital aesthetic and a broader cultural condition at the beginning of the new millennium?

And moreover, what are the origins, means and purposes of the concepts of *dark euphoria* and *gothic high-tech* inherent in the narrative of millennial technoculture that informs this emergent aesthetic and the art works that are submitted as part of this thesis?
Statement of Originality

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

Mitch Goodwin
00 :: 03  Content Index

00 :: 01  Abstract ........................................................................................................................................ iii
00 :: 02  Statement of Originality ................................................................................................................ v
00 :: 04  Acknowledgements ........................................................................................................................ vii
00 :: 05  Notes On the Text ........................................................................................................................... viii
00 :: 06  Notes On the Author’s Creative Work .............................................................................................. ix
00 :: 07  Introduction ................................................................................................................................... xii

01  AN INTRODUCTION TO THE TERRITORY ......................................................................................... 2

01 :: 01  Data Spaces: A Guide to the Cyber City ........................................................................................ 3
01 :: 02  A Methodology for the iUser ......................................................................................................... 21

02  THE EMERGENCE OF THE DIGITAL AESTHETIC ............................................................................. 35

02 :: 01  Chromatic Painting Becomes Digital Synaesthesia ........................................................................ 36
02 :: 02  Machine Translations ..................................................................................................................... 59
02 :: 03  Liquid Electric Ambitions ............................................................................................................... 90

03  THE PROMISE ............................................................................................................................................. 118

03 :: 01  Future Pixel Perfect ........................................................................................................................ 119
03 :: 02  Space Dreaming ................................................................................................................................. 134
03 :: 03  Digitizing Dystopia .......................................................................................................................... 167

04  THE DARKNESS ....................................................................................................................................... 197

04 :: 01  The Black Mirror ............................................................................................................................ 198
04 :: 02  (Falling For) Dark Euphoria .......................................................................................................... 220
04 :: 03  Gothic High Tech .............................................................................................................................. 258
04 :: 04  Ground Zero ................................................................................................................................... 285
04 :: 05  Conclusion ..................................................................................................................................... 301

List of Illustrations ......................................................................................................................................... 307
Bibliography .................................................................................................................................................. 316
00 :: 03 Acknowledgements

Thank you internet.

...

Also many thanks to the two significant women in my life
who at various times over the years
endured the weight of this task as much as me,
Eve & Elly.

And to the newest woman in my life, little Maisy -
may you safely navigate your way to the other side of the grid.

...

Much fondness and gratitude to the following locations where
much of this was written: Eugaree Street, Southport | Hekarwe, Tully
Queens Road, Hermit Park | The Strand, Townsville |
& Picnic Hill, Cape Nelson.

...

I am also enormously grateful for the conversations, illuminations
and raised eyebrows of my brave supervisors over the years:
Peter Wise & Stephen Stockwell.

...

I must also raise a glass to Ryan Daniel for providing me with the
precious time away from the classroom to make this happen,
a more supportive colleague one would be hard pressed to find.

And I also owe Sally Breen a bottle of something sophisticated
and expensive for her herculean efforts in editing
this into shape, line by line, space by space.

...


Cheers!
00 :: 05 Notes On the Text

This is a thesis in two parts: the narrative exegetical component represented by this text and the online archive of media art works developed for the exhibition Dark Euphoria: Unclassified Media. This text was designed to be read in PDF format on a computer or tablet device. There are sufficient images embedded in the text to identify the media artefacts discussed and visually illustrate key points so the text can be read without a direct connection to the web but, the experience is greatly enhanced with internet access.

Numerous art works, media samples and advertising ephemera associated with the analysis have been hyperlinked to an online repository. In most cases I have uploaded copies of this material to a YouTube channel to ensure that these links remain active for the duration. When this was not possible I have endeavoured to use links to content on corporate and organisational websites, commercial YouTube channels or Wikipedia. In such instances it cannot be guaranteed that these links will remain unbroken.

The media art works which form the creative component of this project are also archived online at the exhibition site, Dark Euphoria: Unclassified Media. These works are referenced throughout the text and have been strategically placed in the narrative where most appropriate. It would be my preference that readers access these works in the order that they appear in the text so that the context of their creation is fully understood. In most cases these links go to the web page of the specific art work which includes either the art work in full (in the case of video and digital media) or the documentation of that work (where the work includes a physical installation component). Each page includes a brief artist statement and some background information on the development of the work.

While there are numerous hyperlinks scattered throughout the text the most critical ones to follow are those which pertain to my own art works and of other cultural artefacts which feature heavily in the exegetical analysis. Rather than there just being hyperlinks in the body of the text, there are also hyperlinked images positioned as near as possible to the relevant discussion. These images have been highlighted with an RCA AV connection panel icon superimposed over the image to indicate that these images represent a hyperlink to an online resource.
00 :: 06 Notes On the Author’s Creative Work

Besides this text, the author also explores his thesis in a series of creative works developed for the exhibition *Dark Euphoria: Unclassified Media* which was shown in a physical space in 2012. For the most part the works are digital in nature and are archived online for purposes of analysis with regards to the ideas explored in this text. Below are a list of these works, hyperlinks to their respective web resources and the details of where they appear in this document. The hyperlinks are included here for future reference only. It would be my preference that readers access these works in the order that they appear in the body of the text so that the context of their creation is fully understood.

**Scream 2.0**, 2011, A2 digital inkjet print on metallic gloss paper
Website link: [http://darkeuphoria.info/the-scream-2-0/](http://darkeuphoria.info/the-scream-2-0/)

Comprised of 649 profile pictures from my Facebook profile’s friends list. These images are used to create a mosaic self-portrait of myself recoiling in at the vastness of the network from which the images were originally sourced. This work appears alongside a discussion of user generated content and media assemblages by artists Evan Roth and Mclean Fahnestock (pages 29-30).

**Glitchaclysm**, 2012, 1min 56sec, 720P video
Vimeo link: [https://vimeo.com/67447853](https://vimeo.com/67447853)

Sampled screenshots from a content survey for another work in the exhibition. The glitches which appear in this sequence are derived from scrappy interpolation of frames in MPEG4 files. The images are mostly from video samples of disaster films. The work appears in a discussion relating to synaesthesia as explored by the Italian Futurists, Wolfgang Ernst’s ideas around the processes of signal delivery and the signal disruptions of video artist Chris Cunningham (pages 43-44).

**Dark Euphoria**, 2011, a series of A2 digital inkjet print on metallic gloss paper
Website link: [http://darkeuphoria.info/dark-euphoria/](http://darkeuphoria.info/dark-euphoria/)

These works are dotted throughout the text as emblematic image compositions of my aesthetic response to the notion of dark euphoria. They are also an intervention into the fabric of the digital
image and an attempt to expose what I understand to be the properties of the digitally captured and manipulated photographic image. Several works from this series appear in the discussion pertaining to the light on dark aesthetic and machine visualisation of scientific data (pages 34, 159-161 & 196).

**Primary Propaganda**, 2011, 4min 19sec, 1080P video, four channel video installation
Website link: [http://darkeuphoria.info/primary-propoganda/](http://darkeuphoria.info/primary-propoganda/)
Vimeo link: [https://vimeo.com/41703510](https://vimeo.com/41703510)

This installation is a conceptual exploration of movement across multiple video frames and a response to the exploitation of primary colours to advertise and sell consumer electronics and software services. It is also a personal response to the feeling of alienation that technology and information can evoke in a dense urban environment. This work appears in a discussion about the use of primary colour symbolism in the chromatic painting experiments of Robert Delaunay, the advertisements by Samsung and Sony as well as the corporate iconography of Microsoft and Google (pages 83-86).

**Cyber City Mesh**, 2011, photographic installation, light table, inkjet print of enlarged detail of Arkihabara satellite image, wooden photo frames, inkjet prints on Kodak translucent plastic paper

A “dromoscopy” view of Tokyo’s Electric Town functions as the background surface of this photographic installation. Upon this glossy luminous surface are placed portraits of Tokyo and Sydney commuters. The portraits are printed on translucent paper so they appear to glow upon the surface of the light table. This is a work which responds to – and critiques - the notion of the 21st Century urban citizen as network node and appears in a discussion of manufactured social networks and utopian futures by Nokia, Ericsson and Microsoft and the idea of “context collapse” as proffered by researcher Michael Wesch (pages 128-131).

**Vonnegut’s Fire Fight Fuzz Box**, 2010-2011, 7min 41sec, video installation, PAL video, television, DVD player, assorted plush toys, artillery shell carry cases, leather office chair and TV remote
YouTube link: [http://youtu.be/azoiNzgWEdk](http://youtu.be/azoiNzgWEdk)

A media assemblage (or remix) of content from a media survey conducted during the period 2001-2011 from television, film, web video and video games. The backbone of the construction is an extract from a Kurt Vonnegut lecture on story structure entitled, “The Shape of Stories”. This is intercut with the cat and mouse game between George W. Bush and Osama Bin Laden and the various fantasies and media concoctions that represent that period of history. This appears in the text after the discussion of simulated realities of the video games *Homefront, Modern Warfare 3* and *Command & Conquer Generals* (pages 181-182).
My Endless Dystopian Summer Blockbuster, 2011, 2min 55sec, 1080P video, two channel projection
Website link:  http://darkeuphoria.info/the-endless-dystopian-summer/
Vimeo link: https://vimeo.com/42345058

Featuring two projections which are designed to face each other at the ends of a gallery space the work is made up of samples from over 70 films which deal with notions of the apocalypse, large scale disaster and systematic failure of machines and network technology. The work is constructed in three parts beginning with 25 split screens and ending with a single full screen close-up of performers witnessing a catastrophic event – or the simulation of that event via computer graphics and data visualisation. The work is used to highlight the prevalence of simulated apocalyptic scenarios in recent Hollywood cinema and the emergence of the supercut as a media art form in contemporary networked culture. This argument is presented alongside an analysis of the works of Christian Marclay, Jeff Desom and Kevin Lee (pages45 & 185-189).
00 :: 07 Introduction

At Reboot 11 in Copenhagen in 2009 – “a community event focused on digital change and culture” Bruce Sterling delivered a bristling keynote address in which he outlined his impressions of the coming decade (Sterling, 2009). He proposed two key terms: dark euphoria, proposed as the defining cultural temperament of the times and the modalities of its representation, gothic high-tech. I have borrowed Sterling’s terms and used them as the key defining concepts in this project. Where Sterling was explicitly referring to the “twenty-teens” the decade immediately following Reboot 11, I have taken a more historical view reaching back to the early decades of the 20th Century to present a much broader and evocative pathway to the current dark euphoric moment.

While this study will be contextualised by an examination of cultural artefacts by film makers, photographers and media artists it is also a narrative exposition on the visual documentation of key historical events which map the emergence of a pervasive dark cultural aesthetic. I have plotted out a sequence of events, which supports my central hypothesis by following a very particular strand of Modernism – the narrative of technoculture. I will achieve this by examining the visual language and manifestos of the Italian Futurists, the works of their French contemporary Robert Delaunay, the origins of corporate idealism in the World’s Fairs of 1901 and 1939, the design and symbolism of technology marketing, the ramifications of the Challenger Disaster in 1986, the symbolism of the Chelyabinsk Meteorite blast in 2013, the militarisation of robotics and artificial intelligence, and most potently the visual representation of the events of September 11 2001.
In the broader sense, one could read this project as an investigation into the story of Modernity, Modernity and its various forms of visual representation as the screws tighten on a century of unprecedented horror and destruction. The polar dynamics of the trauma of the real – as experienced by people firsthand – and the detachment that the perception of that trauma engenders when viewed second hand via mediated simulation are central to this analysis. Running parallel to this rendering of Modernism is an exploration of the Utopian techno-futurist narrative – in science, politics and art – which has permeated 20th century cultural production and created a false-future space of technological idealism. This futurist expression is as much a cultural marker as an aesthetic blueprint preserved in the media archive of recent cultural history; a space largely online, mostly networked and nearly always digitally rendered. This project explores such artefacts within the framework of a visual communication analysis. As the narrative unfolds I will establish links to a range of socio-political conditions including techno-futurism, political idealism, corporate propaganda, commercial salesmanship, science fiction fantasy and military futurism in order to demonstrate that the neo-gothic roots of this emergent aesthetic is not limited to the arts and the media industries exclusively but across the full human experience. This is best represented by the presence of a deep visual trauma in contemporary image making, whether that be commercial, historical or fictitious.

The first half of this project will spend considerable time on early 20th Century events and their visual documentation in order to establish that a very long and complex transition is taking place in western society and particularly the culture produced. When I use the term millennia and its variants I am mostly referring to the decades that precede and the decades that follow the year 2000. I will also demonstrate that there exists alongside the futurist narrative a concurrent disconnect of the global audience from the recurring themes of the end times so entrenched in late 20th Century mass media and so prevalent in this millennial period. It would seem that the amplification of apocalyptic scenarios has reached such saturation levels that what remains in the absence of said destruction is instead a disconnect from all future scenarios – utopian, dystopian or otherwise. What is left then is a restless uncertainty about the future that haunts media and culture with a dark anxious gothic tone.

In theoretical terms of course, this aesthetic darkness has numerous precedents. Jaron Lanier has hypothesised that we are experiencing a “new Dark Age” (Lanier, 2011, p. 56) while Paul Virilio cites the “obscenity of ubiquity” of the real-time image loop – the vision machine – for the imposing atmosphere of the mediated apocalypse (Virilio, 2007, p. 11). Filliping Baudrillard’s pre-9/11 pre-millennium treaty on the “end of history” (Baudrillard, 1997, p. 450) Slavoj Žižek proffers instead an “endless utopia” of things as evidence of a gothic disquiet permeating a post-9/11 world...
Žižek, 2002). Baudrillard’s notion of the “weak event” in relation to the Cold War and America’s misadventures in Iraq (Baudrillard, 1989) and Fredric Jameson’s writings on postmodernism especially the concept of the “allegory” are also important framing devices (Jameson, 1971). Aspects of these concepts are utilised in the analysis to establish the rhetorical tone of the discussion with the principle goal being to move on from these theories to propose new ground and fresh associations. The text also intersects regularly with science fiction imagery by noticing that science fiction symbolism and fantasy iconography appear in some very real and very peculiar places namely government sanctioned military research and the PR speak of government funded contractors. It is important then that several contemporary science fiction author’s observations – outside of their fictional oeuvre – are included here, primarily Kim Stanley Robinson’s anticipations of strangeness (K. S. Robinson, 2009), Bruce Sterling’s atemporality (Sterling, 2010) and William Gibson’s observation that the non-mediated world has become a lost country which we cannot get back to (Neale, 2000).

This project is an examination of artefacts at both ends of this spectrum including dystopian and apocalyptic Hollywood cinema, the representations of the liquid electric in film and advertising, the obsessions of the Italian Futurists, the promotional ephemera of tech companies, and the observations of contemporary media artists working in a post-9/11 environment. My use of the term gothic high-tech should be read as a reaction to this narrative – a very personal and very deep anxiety – about the competing futures and lifestyles that such media artefacts purport to predict by way of cultural signification and aesthetic construction. This anxiety exists because the brightest and most streamlined future presented by corporations and marketeers would appear to contradict collectively
recognised realities: imminent climate collapse, dwindling natural resources, the dissolution of age-old traditions, the loss of privacy, the commodification of identity and the ubiquity of stealthy invasive technologies. All of this is in turn amplified by a steady stream of popular cultural products which depict exaggerated apocalyptic scenarios with surprising regularity.

By carefully examining a variety of cultural artefacts – across film, gaming, media arts and advertising – I will endeavour to frame the neo-gothic narrative of millennial technoculture as not just a millennial affliction but a prevailing condition with a deep history rooted in the 20th Century. A complicated and multifaceted history that is (like all gothic traditions) not immediately obvious and not entirely sure of its motivations. By conducting such an examination I hope to tease out the presence of a new dark aesthetic in contemporary digital culture. This, I will demonstrate, is a dense and evolving narrative that has been operating at the intersection of art and technology for the best part of a century. In this regard, both components of the project – the exegetical study and its creative component – should be read as a visual communications analysis focusing on the rhetorical import of design decisions inherent in the construction of key media artefacts and the political and social effects of the aesthetic principles used. Together these artefacts represent cultural markers – plot points if you will1 – that hint at the gothic anxieties below the surface and map the trajectory of technoculture deep into the archive of the contemporary network.

In Part One: An Introduction to the Territory I outline the theoretical position of this exegetical project by examining Bruce Sterling’s notions of dark euphoria and gothic high-tech and a broader interpretation of our relationship with the world we live in. Particularly important is our collective understanding of the concept of the Earth and how we have re-organised our interpretation of its signification in the age of the World Wide Web and electronic interpersonal communications. I will state how Manuel Castell’s “space of flows” and his definition of the “informational society” are important in framing the location and methodology of this investigation.

I introduce the theoretical foundations which compliment these terms, in particular those of Paul Virilio, Jean Baudrillard and Slavoj Žižek. In this section I introduce the iUser as a composite character, both principal investigator and primary audience member, for the media artefacts and the associated narrative plot points unpacked by this project. I also define the primary site of this investigation as the Cyber City – a mostly western, highly networked metaphorical urban space in which these cultural events take place.

---

1 Hayden White describes this method of narrative construction through assemblage of cultural events as the procedure of “emplotment”. In his 1978 essay, Content of the Form, he writes: “Any given set of real events can be emplotted in a number of ways, can bear weight of being told in any number of different kinds of stories” (White, 1978).
Part Two: The Emergence of the Digital Aesthetic establishes our Modernist relationship with vertiginous space, electricity, and human flight. In this section I unpack the concept of simulation and the making of the invisible visible. The concepts of synaesthesia and simultaneism by the Italian Futurists and the chromatic painting in the works of Robert Delaunay are examined alongside the works of contemporary video artists and the corporate image making of Samsung, Sony, Google and Microsoft. Thomas Edison’s promotional films documenting the illuminated pseudo-cityscape of the 1901 World’s Fair are presented as one of the first cinematic techno-futurist simulations. While the World’s Fair of 1939 in Flushing Meadows New York is highlighted as a pivotal moment in the techno-cultural narrative foregrounding the utopian image constructions by electronics manufacturers and communication service providers.

Advertisements, corporate films and science fiction cinema which utilise simulated electricity, liquid energy and specifically luminous blue electrical currents to communicate the invisible intelligence, speed and power of technology are examined in detail. This passage illustrates that the use of electricity as both metaphor and aesthetic embellishment has barely altered since the manifestos of the Italian Futurists some one hundred years earlier.

In Part Three: The Promise I present the most explicit rendering of the technologically streamlined utopian ideals of the corporation as presented by Microsoft, Sony Ericsson and Nokia. We see how the spaces rendered in these advertisements are free from advertising and corporate marketing in a way that makes the everyday seem futuristic – minus the commercial presence of products and their advertorial ephemera. This section also includes an extended examination of the commercialisation and militarisation of space and the incorporation of science fiction tropes into military space projects – the new space dreaming – by deconstructing the post-NASA hyper-simulation of fantasy, paranoia and military bravado.

I show how acts of simulated reality blended with CGI fantasy in the hyper-detail of digital image making in DIY cinema, animation and major video game titles evoke a dark neo-gothic tendency in reaction to and sometimes in concert with corporate media production. I explore the practice of video assemblage via remixing and supercut techniques to emphasise the notion of the remix as a very contemporary and very powerful ontological force in the manufacture of meaning.

The last section of this document, Part Four: The Darkness, highlights the contemporary state of the dark euphoric experience and demonstrates the notion of gothic high-tech at its most explicit. Using Charlie Brooker’s concept of the “black mirror” I dissect the technological symbolism of liquid metal, conflict minerals and machine intelligence. I propose that a superior liquid like substance has always existed across a range of disciplines and technologies all the way back to the
origins of the Big Bang, this I argue is the aesthetic inverse of the liquid electric as proposed in the previous section.

I return to the Italian Futurists and their deep attraction to human flight and vertiginous space, particularly the later works of Domenico Bell and the work of French artist Robert Delaunay. This feeds into a discussion of *King Kong* and the Hindenburg disaster to foreground the notion of falling that so characterises Bruce Sterling’s dark euphoric moment. The 1986 Challenger disaster is examined in detail as well as the work of contemporary media artists whom address the notion of falling. This is then woven into a discussion of Robert Drew’s photo *The Falling Man* and the continual revisiting of this visual motif in popular culture. I will question the absence of superheros at America’s most vulnerable time of need and contextualise the gradual darkening of the superhero aesthetic. The move away from a skyward vision towards a more earthly perspective is foregrounded in an analysis of the first person perspective in film, video games and 3D animation. This will indicate that it is in fact ourselves – the viewer, the end user – who must now assume the role of falling object.

The final chapters of this section deal with the symbolic objects of gothic high-tech and their associated anxieties and uncertainties. I demonstrate the aesthetic links between military machine vision, computer gaming technology and science-fiction cinema. The proliferation of drone technologies and the increased focus on robot automation in military conflicts and defence research projects is discussed in relation to the dominant gaze of the vision machine. The works of media artists Trevor Paglen, James Bridle and Thomas Ruff are presented as evidence of the small number of voices operating in direct critique of these developments.

I conclude by reflecting on a personal visit to Ground Zero in New York City. A site of endlessness, a site of absence. The end game of all of this is the very gothic rejection of the technofuturist quest and a simultaneous anxiety for the dominant power structure created by ubiquitous machine vision in what can only be described as a collective turning away.
Figure 3 “The Eiffel Tower as a Gigantic Lightning Conductor” (Loppé, 1902)
I think it's very true that we are living in a science fiction novel that we all collaborate on, and it's because everything that science fiction was about through its historical named period, the twentieth century, has kind of come true. And also we live in a world that is so intensely structured by science and technology that we can't get out of it. If we were to get out of it it would still be a science fiction move, the retreat to the farm. So it's hegemonic, you can't escape it, we're in that world created by science and technology. And also there's this intense sense of futurity, in that if you opened up your newspaper or laptop tomorrow and it said, "They've cloned six South Koreans successfully and they're all named Kim," you would believe it, there would be no surprise there. Anything could happen. You could say, well, we just got a signal from Alpha Centauri, there are intelligent aliens there, they sent us the code for pi and the Pythagorean Theorem. There's no reason to disbelieve that, either. So we live in this world of anticipation of strangeness, of change, rapidly accelerating change.

A Klee painting named ‘Angelus Novus’ shows an angel looking as though he is about to move away from something he is fixedly contemplating. His eyes are staring, his mouth is open, his wings are spread. This is how one pictures the angel of history. His face is turned toward the past. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing in from Paradise; it has got caught in his wings with such a violence that the angel can no longer close them. The storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress.

- Walter Benjamin in *Theses on the Philosophy of History* (Benjamin, 1968, p. 257)

Bruce Sterling describes the dark euphoric temperament as having two “flavours”, a low end and a top end – *gothic high-tech* being at the top end and *fevala-chic* being at the low end. He utilises contemporary political and technological figures to personalise this assemblage – namely Barak Obama, Nicolas Sarkozy and Steve Jobs. “These are Gothic High-Tech figures, people who position themselves in the narrative rather than building any permanent infrastructure... They’re cheerleaders, they’re not leaders. They’re cheerleaders” (Sterling, 2009). This cheerleading feeds neatly into the premise of the techno-futurist narrative, in which the corporatisation of information and personal communication technologies has confirmed the perverse fantasy of the utopian promises made in the 20th Century technological space and instead replacing it with the new millennia’s non-future future. As Sterling derides, “they’re positioning themselves in the narrative rather than building any permanent infrastructure” (Sterling, 2009). These cheerleaders, these non-infrastructure-capitalists, compliment a narrative in which history is negated and tangible realities – and physical space – are annihilated by high-tech devices and networked services. The antithesis of the future as networked utopia is evidenced by a range of media content, communication design and media art content that explore the darker tendencies in the cultural milieu. The portrayal of apocalyptic end-times in popular American cinema, of wanton destruction on a massive scale by technological agents – alien, viral, nuclear or other – are extreme versions of this yet vividly display a totalising anxiety about the future and the trauma of our most recent past. I examine a selection of
these films in detail in the latter half of this thesis and relate this analysis back to my own media art practice at various points in the text. Relevant in a wider context to this discussion, is the personal gothic tragedies of films such as *American Beauty* (Mendes, 2000), *Ice Storm* (A. Lee, 1997), *Donnie Darko* (R. Kelly, 2001) and *Virgin Suicides* (Coppola, 1999), and more recent episodic television series such as *Six Feet Under* (Ball, 2001), *The Sopranos* (Chase, 1999), *Breaking Bad* (Gilligan, 2008), *Mad Men* (Weiner, 2007) and *Dexter* (Cuesta, 2006) in which the internal space becomes absent, damaged unrecognisable. In these narratives a particular type of western exceptionalism is replaced with a very personal darkness. In almost every case a lead character’s personal anxiety is eclipsed by their despair for the socio-political structure within which they operate. Think Tony Soprano’s frequent laments in Dr Melfi’s office, Dexter Morgan’s “dark passenger”, Walter White’s economies of scale and Don Draper’s complicity in perfecting the sales pitch for American industry. These all represent moments of personal apocalypse, the realisation of unfolding disasters becoming the backbone of the narrative thrust. Each struggle depicted with the exceptional clarity of their more epic cinematic cousins. On one hand the end of the human race in wide screen CGI technicolour and on the other a macro examination of the gradual loss of what it feels to be human.

That’s the situation on the ground. People ask where did the future go? Where are these glamorous versions of the future? ... we’re deliberately choosing to move away from that and into a non-twentieth century space. We’re moving into a situation with Generation-Xers in power, in a depression. A depression where people are afraid of the sky (Sterling, 2009).

Here “on the ground” a stasis of present-future reality persists in the form of a cruel type of repetition in which we skip the agony that comes with the moment of our destruction by previewing it endlessly from multiple angles on multiple screens. The Twin Towers, the Statue of Liberty – New York New York – the metaphorical epicentre of our ultimate extinction replayed, re-edited and re-looped on Forever Vision. And yet we endure. Stepping off the edge and falling back to the Earth unharmed yet un-dead strung out on the sofa in our digital favela. Bewitched by the eternal live stream of the conflict between technological virtuality and the demise of the natural world we

---

2 Relationships with the sky, mechanical flight, trauma and urban decay - or semi-permanent futures – will permeate this text as they do Sterling’s narrative. It is instructive that in his description of gothic high-tech’s low end “flip side”, favela -chic, Sterling uses both the network and the sky to sketch the scene for our understanding of the paradoxical nature of the low-end trope: the ironic euphoria of the downmarket Gen-X cyber city squatter. “You have lost everything material, everything you built and everything you had, but you’re still wired to the gills! And really big on Facebook” (Sterling, 2009). He likens MySpace to Brazilian squalettes, high rise favelas stacked into the sky, “a kind of see-through building” in which the internal structure has been built - girders of steel, columns of cement – sometimes 80 stories high and although they are never completed they are occupied by squatters.
watch Lady Liberty’s torch sink beneath another wave, the asteroids raining down from the sky, a rogue computer virus eliminating history – the dark euphoric fall has many visual icons.

I will define dark euphoria on Sterling’s terms – an involuntary episode characterised by an overwhelming sense of falling from a precarious height – through the millennia, back towards earth, catching glimpses of history and memory as they hurtle past us, through us - into the vast archive of digital objects. While gothic high-tech is perhaps a more malleable term representing the anxiety and the uncertainty that cultural artefacts and their technological apparatus leave behind. Gothic high-tech is very specific to the decades which straddle the millennia. It is a contemporary phenomena – neo-gothic if we were to compare it to classic gothic tropes – a personal evolving anxiety. It is more of an operant than a condition with respect to the parameters of this discussion. Conversely, the dark euphoric temperament Sterling outlines is a deeply externalising force; it could be read as a scene, a vista, a plot point – an image. Dark euphoria is not exclusively wedded to the technological – moments no doubt abound in the disciplines of art, politics, history and war – but most certainly appear regularly in the broader western capitalist traditions that intersect with the techno-cultural narrative. I focus on that narrative here. The link Sterling makes is explicit between the dystopian experience of an entire generation and the futurist techno-cultural narrative of the corporation.

For, in the coming dark euphoric decade:

... things are just falling apart, you can’t believe the possibilities, it’s like anything is possible, but you never realized you’re going to have to dread it so much. It’s like a leap into the unknown. You’re falling toward earth at nine hundred kilometres an hour and then you realize there’s no earth there. That’s a dark euphoria feeling. It’s the cultural temperament of the coming decade (Sterling, 2009).

The visual iconography of this descriptor has a strong presence in the present-future narrative of the new millennium’s first two decades; from Richard Drew’s 9/11 image The Falling Man to the rotoscoped silhouette of Don Draper falling to the streets of Madison Avenue in the opening sequence of television series Mad Men. The harrowing notion of falling – down into the steel concrete mesh of the city, down into the grinding cogs of a broken paradigm – is writ large in the contemporary vision stream. Most spectacularly perhaps in the often repeated motif of the

3 Technoculture is a broad term that encapsulates the accumulation of technological invention and mediated culture – in a mostly western context – as society lurched through the 20th century towards new technological structures, new methods of cultural production and critically new complexities of informational embededness.

4 More commonly referred to as ‘Gen X’, Sterling alludes to the generation for whom the full manifestation of the trauma of the dark euphoric moment is encountered at the intersection of these two cultural narratives. His speech was delivered in 2009 his audience were, according to the organiser Thomas Madsen-Mygdal, most probably on average in their mid-thirties, “people who grew up with grand wishes for the internet, etc. and came to see wars, etc. instead” (Madsen-Mygdal, 2014).
Figure 4 Return to Earth scenarios in early 21st Century cinema: Star Trek Into Darkness (Abrams, 2013), Oblivion (Kosinski, 2013), Elysium (Blomkamp, 2013), After Earth (Shyamalan, 2013), Oblivion (Kosinski, 2013), The Man of Steel (Snyder, 2013), WALL-E (Stanton, 2008), Avatar (Cameron, 2009) and Gravity (Cuarón, 2013)
plummet back towards the Earth – or the remnants thereof – back to nature, into the arms of its virtual dreamscape. Instead of playing witness to the fall, we are actually experiencing it firsthand. These episodes are most explicitly rendered in the steady stream of return to Earth films which have dominated the box office in recent years, beginning with the green shoots amidst the trash piles in WALL-E (2008) and the figurative origin parable of Avatar (2009) to the more recent After Earth (2013) in which the nurturing symbolism of Mother Earth has been reclaimed by a vengeful predatory cousin. In these dystopian future worlds there is a deliberate act of returning – to equalise, to stabilise, to set the record straight and in the case of Oblivion and Elysium (both 2013) to uncover a latent conspiracy and to disrupt surrogate systems of control. The act of falling itself is explicit in the dystopian analogies of The Man of Steel, Star Trek into Darkness and most recently Gravity (all 2013). Here the vehicle of flight, the apex of futurist space exploration becomes the broken Ark of misplaced innocence delivering its human cargo from the perils of supersonic flight back down to the virgin soil like chunks of molten rock spitting from the sky (see Figure 4).

As I shall establish, these epic dystopian canvases are the end game in a long narrative counterpoint to the Futurist myth making of millennial technoculture. In one vein of storytelling there is light, chrome, sustainable architecture, Nordic pine and touch-screen comfort and in the other a gratuitous mega-image-loop of an evolving darkness. Sterling articulated this well at Reboot 11 when he observed the obvious contradiction of the Utopian notion of “progress” and the very dystopian reality of the present-future space:

Everybody for 200 years, almost since the twelve hundreds have known what progress means. They know what it means to be progressive and they know what it means to be futuristic. You get more scientific knowledge, you create more tools, make more jobs, you master nature, you get more power, cheaper power, you struggle for a better life for your children, you’re looking for health, prosperity, material security, shelter, bigger, faster, stronger, knowing more. Everybody knows that’s progress. That’s not what we’re going to get. The actual objective situation looks more like this: No money, scarcity, financial collapse, collapsed states, general precarity, an energy crisis, low intensity global warfare, and a rapidly advancing climate crisis (Sterling, 2009).

Each of these conflicting parables have the same starting point deep in the beginnings of the 20th Century, and each begins and ends with objects in the sky. It is our complex relationship to the sky – as anxiety and fantasy – that is so emblematic of our uneasy relationship with technology. Mechanical flight, the act of falling through space and our fascination with height in architectural form is a recurring motif in this narrative progression. Indeed the conquering of the problem of mechanical flight and the capture and display of the moving image were the grand technological precursors to what followed: The construction of the Eiffel Tower and the Futurist’s depiction of
manned flight; the scaling of buildings by heroic beasts and the mediated destruction of planes and national monuments; the giddy first person point of view vision of super heroes in full flight; the snapshot of the Falling Man and the charred wings of the Angel of History. The synergies between height, flight and the image are all intrinsically linked to the gothic high-tech unravelling of our past through the prism of a manufactured future-scape.

Sterling describes an approaching dark euphoria and our passage through it but his “leap into the unknown” does not represent an ending; it perhaps best demonstrates via the act of falling, an endlessness. A state which Slavoj Žižek refers to as the dystopian horror of an unending “utopia” of things (Mossop, 2011). The thrill of the fall, the titillating view from on high, one’s weight and form equal only to the velocity at which we hurtle through space and time albeit without the fulfilment of self-annihilation. Instead the end would appear to be happening to someone else, somewhere else – the fall is virtual – a safe cultural fantasy. The Falling Man however, did make impact. We live the velocity of his exit approach endlessly and yet we never bear witness to the pulverising end. Instead the climax is left to our darker imaginings – a gothic high-tech moment deeply felt but never seen.

In his essay, Anorexic Ruins, Baudrillard states that, “everything has already become nuclear, faraway vaporised. The explosion has already occurred; the bomb is only a metaphor now” (Baudrillard, 1989). Foreshadowing the final simulacra of disconnect he would canvass when observing Gulf War 1.0 and 2.0’s mediated re-runs of infra-red fire fights, combat vapour and the endlessly victorious yet endlessly defeated soldier, Baudrillard precedes Virilio and Žižek’s critiques with the concept of the “weak event”. This is important, as the metaphor for nuclear annihilation has a deep history in the 20th century – less as a documented event but rather as an embodiment of fear and anxiety of an imminent future event but nonetheless a hollow prophecy. The failure of the Cold War to produce the final apocalypse left a distinct vacuum from which all subsequent equations seem somewhat dull and diluted. The immediacy and foreboding of the Cold War’s 1st Act during the 1950s and 1960s gave way to the pantomime of Act Two: the 1980s. Here the virtual battle is the only battle the narrative has left: Reagan’s Hollywood bravado and his SDI dreams (aka the Star Wars missile shield, 1983); Stallone’s virtual superpower confrontations in Rocky IV (1985) and Rambo: First Blood Part II (1985) and the Don Simpson produced Top Gun (1986) which represented the technological fulfilment of the absent dog fight between East and West. Similarly other late 20th Century manifestations of encroaching doom receded with each passing decade. The oil crisis of the late 1970s and the economic recession of the 1980s contributed to a sense of impending doom that was exacerbated by theCold War’s nuclear threat. However, it was the Gulf Wars that brought the spectre of nuclear annihilation back to the fore.

---

5 Baudrillard has been criticised for his over simplification of these so called “weak events” (the fall of the Berlin Wall and the two Gulf Wars). However, for purposes here, the term “weak events” is helpful in describing the small micro-steps notions of fear, terror and destruction have taken in the background of the antithesis of this narrative – the techno-cultural ambitions of the 20th century’s Utopian dreamscapes.
1970s was an engineering shortcoming and geographical skirmish rather than the end of the fossil fuel glut, the AIDS virus was more personal tragedy than global epidemic, the LA Riots were the exposure of a brutal truth yet largely suppressed with brutal force, the Seattle riots were a mobilisation which failed to evolve into a movement, Y2K was either an elaborate industry invention or a nervous miscalculation, and the tumble of dotcom stocks was a protracted whimper rather than a wholesale crash which nonetheless precipitated the US economy’s slow ebb towards another non-descript recession and the reality of a new global century. All of these events are, by Buadrillard’s definition, weak events, relative only to the background noise of their particular epoch of hysteria. Even then, these are more localised hysterias globally mediated, rather than the high-definition all-consuming end of days scenarios which constitute the shrill background noise of the new millennia.

9/11 however, was a “strong event” – for Buadrillard and the global audience – a highly visible evocative disruption to the signal. In a classical gothic sense, we are left with an ache, an anxiety, a palpable uncertainty for the present and the future. Between the dense haunting enclosure of the accumulated remnants of the 20th Century and the foreboding condition of the external opening out of the new millennia, the dark euphoric moment meets its apex in 9/11. Here in this hyper-reflexive space, the war/s continue, fragmented and geospatially agile, the air is thinning, discoloured, punctured and mega-scopic, water is falling and rising simultaneously like the encroaching walls of the Death Star’s garbage compactor. We are told that we have little choice but to call upon the machine to facilitate our escape from these collective ruins of our most recent techno-futurist fabrications. In other words, we must utilise the processes of a machine vision of ourselves and our networked landscape and author a narrative that reaches beyond the end and placates our embedded fears and anxieties.
about the present’s endlessness. We do so in order to overcome the spectre of the “ghost-like traces” of the past which have seemingly so darkened the promise of the zeitgeist (McNeil, 2011). Into the breach then steps the corporate futurists with glossy visions of a sanitised technological dreamscape free from the horrors of the universe beyond the screen.

This text will seek to map out this transitional territory by examining the converging aesthetic parables of the millennial narrative – the dark, predominately digital, aesthetic of contemporary media arts and the concurrent marketing of a technological engagement with a colourful vibrant future via dense and at times contradictory mediascapes. Here the eulogising of technology, through manifestos of light, colour and pixels, of urban spaces and information flows, belies the fact that the sales pitch by governments, corporations and cybernetic theorists has instead manifested a darker shade in the cultural fabric of contemporary media art production and corporate image making.

This thesis should not be read as a lesson in art history or the economics of media distribution but rather an examination of the cultural artefacts. There are dramatic links between machines for art making and the undoing of the technological narrative which mythologises such machines through the objects of cultural production. It is the duality of the machine – of the digital, of the simulation – as both destroyer and saviour that lies at the heart of this story. With this in mind, the narrative arc of the 20th century can be framed as a cycle of technology-driven art making that intersects with the technological sublime and the aesthetics of Modernist idealism. Yet these technological apparatus also possess more slippery modes of disruption – practises of surveillance, the appropriation of fiction and fantasy for political and military purposes and the dramatic reconfiguring of the techno-futurist ideal.

Although anxiety and trauma certainly do influence proceedings, it is not possible to embellish this text with a deeper examination of psychology as derived from wider social and environmental effects. However, the conditions which precipitate these effects should be understood to weigh heavily in the background and that it is the audience that the techno-cultural narrative plays to who is most at risk. Obviously, when we think of apocalyptic futures, we think of environmental, nuclear, cosmic, microbe or alien annihilation and when we consider dystopian links to our present reality we cannot help but recognise catastrophic weather events, ever diminishing resources and religious fundamentalism. And when we contemplate trauma from a localised perspective it has a more immediate effect: we can envision the collapse of the global economy in all of our possessions, the pressures of over population in the streets, the dumbing down of public discourse and the threat of cybercrime on our screens.
The Cambridge Centre for the Study of Existential Risk (CSER) is a research institute established in late 2013 with seed money from Jaan Tallinn, the founder of Skype, to provide “politicians and the public with a list of disasters that could threaten the future of the world” (Price et al., 2013). It lists the immediate threats facing humanity beyond the more commonly regarded risks from nature (such as asteroids and volcanoes) as the threats posed by humanity’s technological power:

Specific technologies that scientists and writers of great distinction have raised concerns over include artificial intelligence, biotechnology, and nanotechnology (e.g., von Neumann 1958; Sagan 1983; Parfit 1984; Gott 1993; Hawking 2010; Rees 2003; Posner 2004; Matheny 2007). A more general concern relates to our increasing reliance on limited resources and fragile, increasingly interconnected systems (Price et al., 2013).

Leading the CSER program is astronomer Martin Rees along with a distinguished cohort of scientific luminaries such as Peter Singer, Huw Price and Stephen Hawking. Prior to the Centre’s establishment at a meeting of the British Science Festival in a speech entitled “We Are In Denial About Catastrophic Risks” Rees summarised both the immediacy these threats posed and the distance at which society chooses to keep them:

In a modern, efficient world, we no longer stockpile food. If the supply is disrupted for any reason, it would take about 48-hours before it runs out and riots begin... The wide public is in denial about two kinds of threats: those that we’re causing collectively to the biosphere, and those that stem from the greater vulnerability of our interconnected world to error or terror induced by individuals or small groups... Nuclear weapons are the worst downside of 20th century science. But there are novel concerns stemming from the impact of fast-developing 21st century technologies. Our interconnected world depends on elaborate networks: electric power grids, air traffic control, international finance, just-in-time delivery and so forth. Unless these are highly resilient, their manifest benefits could be outweighed by catastrophic (albeit rare) breakdowns cascading through the system (Rees, 2013).

CSER is clear about what these risks are, as Rees highlighted again and again in his speech, there is a strong man-made technological component – thermonuclear war, electronic contagions and misguided geo-engineering, and ecological factors – conflicts over energy and resources, viral epidemics, rapid rises in global temperatures and other runaway climate effects. Even the CSER website’s title banner makes their narrative explicitly a digitally rendered apocalypse with animated images of computer code, the Ebola virus, the internet, rogue comets and snarling galaxies (see Figure 8). But Rees also warns against the complacency that springs from the exaggerated media simulation:
All too often the focus is parochial and short term. We downplay what’s happening even now in impoverished, far-away countries and we discount too heavily the problems we’ll leave for our grandchildren. In a media landscape oversaturated with sensational science stories, "end of the world" Hollywood productions, and Mayan apocalypse warnings, it may be hard to persuade the wide public that there are indeed things to worry about that could arise as unexpectedly as the 2008 financial crisis, and have far greater impact (Rees, 2013).

A recent study funded by NASA and carried out by the Godard Space Flight Center determined that such outcomes would not only have catastrophic effects but hasten the collapse of civilisation. By accentuating the gulf that already exists in society between those who have (the Elites) and those who do not (the Masses) any disruption to the status quo has the potential to accelerate the rate of decline and that in fact the collapse of society would precipitate any collapse in the natural world. And while civilisation,

... appears to be on a sustainable path for quite a long time, but even using an optimal depletion rate and starting with a very small number of Elites, the Elites eventually consume too much, resulting in a famine among Commoners that eventually causes the collapse of society. It is important to note that this Type-L collapse is due to an inequality-induced famine that causes a loss of workers, rather than a collapse of Nature (NASA in Ahmed, 2013).

There is therefore plenty to be anxious about beyond the virtuality of the network in both the psychology and the structure of the social enterprise. I will show how there is undoubtedly a transferable sense of this anxiety in the networked cultural markers that form the bulk of this
examination: a fear of the sky, a mistrust of the machine and most pertinently a fear from within of human nature itself.

The information network (the archive, the torrent stream, the social network, the virtual marketplace) plays a central role in this analysis as it has become the point of entry as well as the distillation device for these cultural markers. The information network is the keeper of both the visible record and its mediated reflection – the virtual history of the unseen emerges from its mesh of fibres. This is the venue where one can find the rocket ship that crashes into a comet, the shooting star of global celebrity, the path to pandemic of the N5N1 virus, the nefarious sleuthing of government agencies and the glittering lights of a once vibrant Modernism (see Figures 9-11). And if we step back and look at the historical scope of this exegetical study (a period that stretches roughly from 1890s to 2010s) through the prism of the network archive then we can quickly discern the velocity of unprecedented social and technological change. And it is towards the end of this period when the emergence of digital network protocols becomes not only a key historical event in and of itself but the very axis upon which the past tilts awkwardly into the future.

While other studies have comprehensively examined the emergence of the networked society elsewhere⁶, it is important to emphasise that as a research tool networked media plays an important role in providing a vantage point from which to view the parallel emergence of a dark pervasive aesthetic – Sterling’s dark euphoric moment. Networks are defined by the traffic they facilitate and the

---

⁶ Some of the notions alluded to here such as speed, virtuality and networking can be found in Manuel Castell’s *The Rise of the Network Society* (Castells, 1996) and Paul Virilio’s *Speed and Politics* (Virilio, 1977). Perhaps even more instructive in a historical context is Stuart Brand’s lucid account of the early years of the MIT’s Media Laboratory in *Media Lab: Inventing the future at MIT* (Brand, 1987) and for an update on contemporary network politics see Geert Lovink’s text, *Uncanny Networks* (Lovink, 2002).
connections they make between one digital object and another, for practical purposes we understand this to be the World Wide Web.\(^7\) It is this platform which makes visible these networked relationships and therefore makes accessible – in many cases for the first time – the majority of the artefacts which constitute this study. And even though in relative historic terms it is a medium in its infancy it is in a transitional moment and much of what is available to access and view is somehow marked by this association. Think here of the viral meme, the YouTube parody, the video supercut, the compressed audio file, the torrent stream and the manipulated photograph – all digital objects which are defined by as much as what they are as what they do.

Just as electrification in the early decades of the 20\(^{th}\) Century inspired the Futurist’s manifestos and directed the pioneering gaze of the camera lens to its luminous orbs, the web is an equally seductive, immersive and evocative force. Technically the web is the visual representation of the system that operates beneath the surface, but for all intended purposes it has become a dynamic archive for societal and cultural image making on a global scale. The site of action in which this operates at its most potent is the networked city, or as I shall term here, the Cyber City. This is the site where broadcast mediums forge relationships between the media they carry and thereby maximise the points of entry for their target audiences. The Cyber City is the site through which all information passes – or has the potential to facilitate access to that information – resourced with culturally diverse, mostly western netizens for whom reliable web access is near ubiquitous and up to date devices and subscriptions are affordable and many. The Cyber City is the physical grid upon which the web of content sits and the web itself is the physical space’s most complex and most dexterous simulacra. As Mark C. Taylor observes:

\begin{quote}
This web is neither subjective nor objective and yet is the matrix in which all subjects and objects are formed, deformed and reformed. In the postmodern culture of simulacra, we are gradually coming to realise that complex communication webs and information networks, which function holistically but not totalistically, are the milieu in which everything arises and passes away. These webs and networks are characterised by a distinctive logic that distinguishes them from classical structures and dialectical systems. Though always eluding classificatory schemes constructed to capture them, webs and networks nevertheless display certain rules that guide their operation. The articulation of these rules defines the contours of non-totalising structures that function as a whole (Taylor, 1997).
\end{quote}

\(^7\) The contemporary politics of these networks – specifically Big Data, personal privacy and corporate surveillance - is also beyond the scope of this study, but it most certainly has relevance and I would point the reader to Jaron Lanier’s text, *Who Owns the Future?* (Lanier, 2013) as perhaps the most up to date and progressive critique of this space. For an account of the broader sociological issues surrounding technology and global networks the edited collection *Beyond Globalization: Making New Worlds in Media Art and Social Practices* (Aneesh, Hall, & Patrice, 2012) provides a wide range of perspectives.
Within this data space that nodes of information, production and distribution coalesce in geographical space as much as they do in a virtual network. Manuel Castells in his 1996 text, *The Rise of the Information Society*, states that the “new global economy and the emerging informational society have indeed created a new spatial form, which develops in a variety of social and geographical contexts: megacities” (Castells, 1996). Societal networks particularly, become enablers for cultural nodes in the Cyber City and as communication technologies become more personable and are increasingly embedded in a user’s space so too does the individual facilitate node-like functions; as Jaron Lanier observes, “digital information is just people in disguise” (Lanier, 2013, p. 19). Castells describes the site of these device based exchanges across a network as “the space of flows” – flows which not only operate within a networked system of protocols but thrive through their immediacy and interrelationships with other facilitators. Castells “imagines a global electronic network superimposed upon the world, a network along which digital information consisting of texts, images, and voice flows instantaneously. Interactions are often simultaneous rather than sequential. This network supersedes the railways, highways, and communication linkages of the pre-information age” (T. P. Hughes, 2004). In this context it is important to emphasise the transitions that have taken place – linearity has become simultaneous and distributed (rhizomatic if you will), while physical analogue systems of communication and distribution have developed into digitised modes of exchange. One of the primary commodities of these flows has become content, vast amounts of data and bandwidth dedicated to the act of – and our interrelationship with – content. Contemporising Castells, Pier Cesare Rivoltella in *Digital Literacy: Tools and Methodologies for Information Society*, writes:

It (information society) cannot be identified with the introduction of information and communication technologies (ICT); better it could be blended with the systematic reorganization that these technologies promote on a social level. Rather than talking about information society, the Spanish sociologist prefers to refer to the concept of informational society. In the first case, information is the content of society, while in the second one it defines the nature of society itself. Informational society is a society ‘made out of information’ (Rivoltella, 2008).

---

8 This runs parallel to the emergence of consumer culture and the movement from public spaces of discourse in the city / town and hamlet to the online public commons which has evolved from the bulletin boards of the 1990s to sophisticated social media platforms and so called “dark net” user groups. But as the physical public space turned into a consumer corridor built around the consumption and movement of goods so has the internet succumbed to similar pressures, including the concentration of media ownership and the acquisition by corporations of smaller competing or complimentary firms and technologies – News Ltd (MySpace), Facebook (Instagram), Google (YouTube), Apple (Siri) and Microsoft (Skype). This also has massive implications for individual privacy and the management and security – and the potential profiting from – personal data.
And within this society of information, aka the Cyber City, the primary commodity of our examination in the context of this discussion is image orientated informational exchange via cultural production and indexing in a multitude of forms – whether that be in the vogue of contemporary media arts practice, corporate and independent media production, the exchange of social media, the feverish distribution of a viral meme or the archiving of a historical digital artefact. These exchanges represent essentially the same thing: cultural markers as digital objects.

Frank Tomasulo writing on the historical event as a mediated text in his essay on the contradictory readings of the 1991 video of the beating of Rodney King, echoes Hayden White’s notion of “emplotment” in terms of the ubiquity of the media artefact:

Increasingly, the postmodern world has been called upon to rely on cinematic and electronic evidence for its depiction and understanding of historical events. In short, our concepts of historical referentiality (what happened), epistemology (how we know it happened), and historical memory (how we interpret it and what it means to us) are now determined primarily by media imagery (Tomasulo, 1996, p. 70).

Tomasulo also cites White when he cautions the researcher when dealing with the mediated text: “The analysis of visual images requires a manner of ‘reading’ quite different from that developed for the study of written documents” (White, 1988, p. 1193). A visual text can be loaded, from the manner in which it is framed, the method of its acquisition and construction and the context in which it is presented. Being objective is a difficult task, as Maurice Merleau-Ponty writes in his often quoted posthumous text, *The Visible and Invisible*: “If we ask ourselves what is this we, what seeing is, and what things or world is, we enter into a labyrinth of difficulties and contradictions” (Merleau-Ponty, 1968, p. 3). For this reason Sterling’s key terms, dark euphoria and gothic high-tech, act as both a guide and an internal logic when plotting the narrative of technoculture in this project.

In addition, the meaning thereby created from this visualisation of knowledge making – or the visual construction of a creative work via visual narrative technique – becomes a critical point of entry into the object and therefore a wider cultural condition. Meaning can be inferred from the time of its construction, its ongoing history as cultural artefact and most critically the context in which an object might be archived, displayed or redistributed. The society of information in the context of network systems and functions amplifies neo-gothic tendencies not only within the technological apparatus but in the cultural narratives sustained and distributed by the network – itself a giant endless text. This permits then, in the context of the 20th century’s techno-futurist narrative, an analysis of various seemingly disparate yet intersecting critiques of a century’s worth of
mediated history that foreshadows the dark euphoric moment and the broader social implications. Any analysis of a new or emergent aesthetic of media art must involve a critical interpretation of both the visible present and the hidden future loop as mapped across a variety of cultural forms. The networked space allows this to happen. We must somehow overcome Baudrillard’s “hysteresis of the millennium” which suggests that we are frozen in crisis, unable to see “beyond” the end – through the here and now – into a possible future (Baudrillard, 1997). Conversely, it is also important that we can determine the origins of that crisis. This analysis therefore becomes an urgent re-appraisal of both an object’s place in history but also its place in the realm of visual communication studies. The object and its signification becomes a layered narrative, unravelling meaning in both directions and demanding we re-orientate our use of machine visualisation to look back at that which looks at us. In Art As Far As the Eye Can See Paul Virilio observes the transference of the gaze from the stars to ourselves from our wonder of the mysteries of the heavens to an anxiety of our place in the universe: “The aeroсopy of our view of the world has tipped the gaze of each and every one of us inwards towards the centre of the Earth, while we wait for the unending round of spy satellites in turn to exercise the navel gazing we are now so familiar with” (Virilio, 2007, p. 46). This reductionism is most apparent when our necks are bent over the screens of our mobile device, like some seductive black mirror, drawing us into a state of “megalomania” and of static introversion that “provokes the ‘relief’ of the occurrence of the world” (Virilio, 2007, p. 46). Here the digital object – the screen of the telecommunication device – provides the luminous distraction from the real and reinforces notions of a false futurist ideal. This of course chimes perfectly with Zlavov Žižek’s description of the new millennia as an “endless future” and his thesis on 9/11, The Desert of the Real (Žižek, 2002, p. 19). But for Virilio the present-future space is not only without end, but also without a beginning as well. It cannot be navigated and therefore cannot be understood, “it is no longer the growth of the desert which awaits us, but its impassability, its turning into a closed circuit” (Virilio, 2007, p. 29).

The archive, the network, and the broader digital narratives of contemporary culture become the conductive tracks, capacitors and resistors embedded into the substrate of the cultural circuit board. They not only form the reference base for such observations but also largely facilitate the convergent flow of the ideas they subsequently generate – as tools for research but also as

---

9 This would certainly hold true for Slavoj Žižek’s critique of the future-present stasis in which the endlessness and non-epochal nature of the everyday banality of the new millennia keeps the real future – the promised technological deliverance – frustratingly at arm’s length. However as we will endeavour to unravel, there are indeed active agents amidst the content producers in contemporary arts for which the unseen is truly exposed and the future belted into sharp relief.
generators for anxiety at their sites of consumption. These are fragile, tentative and often temporary spaces. These are spaces which are self-referential, self-fulfilling technological symbols of a deeper unseen narrative – Sterling’s gothic high-tech temperament in action.

And so, as observers and researchers of digital media in the new millennia, the notion of Baudelaire’s flâneur – as cited by Walter Benjamin – is relevant to developing a picture of these narrative juxtapositions, data signifiers and cultural linkages and thus to defining the aesthetic tone of the digital as we move through the networked space (Benjamin, 1968, p. 167). The interaction, consumption and repatriation of cultural data via the user-as-node rationale when navigating the surface flows of the Cyber City must become the “virtual affair”. The visual interplay and narrative juxtaposition of commercial interventions and cultural response (whether by consumption, remix or comment) shall be his or her engagement.

This user-as-node - the iUser - is the archetypal resident – netizen if you will – of the Cyber City. The iUser is the Cyber City’s primary agent/provocateur/producer/consumer/passenger. This contemporary net-surfing flâneur rides the information – detects and navigates patterns to the same degree that the information is re-articulated in various forms across, around and through each block of the data flux. Here, information and relational signification is internalised, omnipresent while hidden, traumatic while transformative and as real as it is seemingly unreal. While this discussion may be an attempt to explain the cultural precedents of the contemporary media space and its associated cultural markers at the turn of the millennia it must also attempt to divulge the gothic anxiety of the iUser’s experience – the unseen and the uncertain, the horrific and the sublime. The iUser is reader of the text, the user of the device, author of the code and producer of the content. The investigation is occurring within and without as resources are mined from the web, the sidewalk, the billboard, the device, the screen and the page.

I have attempted in this chapter to map some of the theoretical territory of this study by citing some of the key theorists who will be used throughout the cultural narrative exposition of this text. By signalling Bruce Sterling’s terms dark euphoria and gothic high-tech as the key concepts that underpin this research project I have given some context to how the narrative will be unpacked. I have placed the site of this study in the network of information flows as defined by Manuel Castells and further refined by Paul Virilio as the “image loop”. Predominately this is a visual study of cultural production. The media artefacts analysed will be mostly digital and their place in history correlate with key technological events which took place from the early years of the 20th Century to the
present. In the next chapter I examine more closely how content running on corporate, government and broadcast networks constitute a site of media consumption and more importantly the signification of meaning. And while I have already introduced the concept of the Cyber City as a metaphorical space that is coded by data and typical of a networked realm, I will use the example of the barcode and the Earthrise image as signifiers for the virtualisation of the lived experience and as a metaphor for the reductive power of digital image making. The Cyber City could then be, quite possibly, representative of the western capitalist network operating within a vast archive of digital objects. This archive constitutes the parameters of this analysis. I will also more fully explore concept of the iUser as the archetypal content consumer and the primary agent for this research endeavour. Through the work of Evan Roth, McLean Fahnestock and myself I will demonstrate how the collating and remixing of network content is a typical response to the accumulation of media content in this space.
Figure 12 Richard Long's A Line Made by Walking (Long, 1967)
01 :: 02 A Methodology for the iUser

With the advent of nanotechnology and the convergence between microelectronics and biological processes and materials, the boundaries between human life and machine life are blurred, so that networks extend their interaction from our inner self to the whole realm of human activity, transcending barriers of time and space.


Technological enablers are repurposing physical space in cities all over the globe. As Mark Weiser observed over two decades ago, “the most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it” (Weiser, 1991). The enabling services which have developed since Weiser’s remarks are indeed invisible and come in many forms: wireless web infrastructure (IEEE 802.11), mobile telephony (3G & 4G), global positioning data (GPS) and short wave transmitters (RFID). While the devices to plug into these services are becoming more ergonomic and more dextrous, and are steadily reducing in size, weight and power consumption. As the economies of scale shrink so does the time required to negotiate the networked environment and to source and gather content. Affordability and connectivity enhance the iUser’s ability to fulfil their function in the feedback loop and to provide the mechanisms for external agents to access these private spaces like never before.

Collect the WWWorld: The Artist As Archivist in the Internet Age was a curated exhibition I attended at the 319 Scholes gallery in Brooklyn, New York in 2012 which featured “appropriated and manipulated images, data, animated gifs, video, clip art, and blogs to create screen projections, net art, prints, and installations.” Leila Christine Nadir, in her review of exhibition on Furtherfield.org, wrote at the time: “The boundaries between the indoors and outdoors, between the private and the public, have been broken down by digital technologies. As data slips into our most intimate spaces, the way rain and wind once ripped through primitive shelters like caves and huts, we return to ‘a rather basic form of humanity’ – an uncanny ‘21st century version of ancient cultures and traditions.’ Sorting through an ‘erratic, uneven mess’ of information, human beings are once again hunters and
gatherers” (Nadir, 2012). The tension for the artist then – and the iUser as viewer and participant – is between how one can interact openly and productively in such a setting and how they can avoid succumbing to the data mining activities of the seemingly innocuous social networking agendas of corporations and commercial advertisers that make that interaction possible.

Mainstream media of course, still dominates this new networked habitat as the pre-eminent cultural agent. The machinations of its market structure and exploitation of technology are strategically linked to the network’s multifarious channels. Search engines, social media software, news portals, game servers and even personal email accounts are just some of the network stepping-off points which enable content providers and cultural marketers to intersect with the iUser. The venues which make up a large percentage of the web’s traffic: Facebook, Twitter, iTunes, Instagram, Google, YouTube and Windows Live, all have strong relationships with content publishers and distributors. The proximity therefore of commercial content to the social enterprise of the network has fostered a more intimate relationship with its audience than ever before. The iUser is exploited by the facade of personalisation these services offer and the symbolic nature of the icons and logos which either enable their interaction or facilitate their consumption therefore placing the iUser at the very centre of the commercial agenda of corporate myth making.

For instance, if we were to trace the progression of the visual image as a signifier for a commercial product, a designation of place, or decree of ownership there has been a steady move away from abstract symbols to a more visually sophisticated form of machine language code. The representation of what this code denotes now relies on complex visual iconography – a far more explicit articulation of the code’s commercial identity. While essentially these images serve a similar function the information they represent has evolved along with the design of the code. The first image of the Newcastle Waters cattle branding (see Figure 13) functions to designate the ownership of the cattle and has a limited functionality apart from identifying stock numbers and quelling squabbles over ownership of stock and feeding pastures. The dominate code with
regard to the tracking and quantifying of commercial product remains the barcode (see Figure 15). However, rather than being merely sighted and registered the code contains information which can identify an item through a minutiae of details (size, style, volume, model, colour etc.) expressed as symbolic and numeric information then used in spread sheets and tracking systems by manufacturers, suppliers and retailers. However, the image, to the untrained human eye is fairly derivative (unless one was familiar with the relevant product codes the numerical values along the base of the code) and has no meaning or intrinsic value. The evolution of this means of information exchange is the QR Code (see Figure 16) a system developed in Japan to track and identify products in manufacturing facilities. Similar to the function of the barcode, the image is designed to be read by a machine, but rather than an infrared laser beam its most complex iteration requires the lens of a mobile phone or tablet to decode the information as a digital image. The design of the IBM QR code (see Figure 17) is a further evolution of the system which now includes visual signifiers embedded into the design including corporate logos and photographic imagery.

The code as a digital object has become a part of the wider lexicon of visual language and signification. This creates a certain aesthetic and poetic value and can be viewed as a commodity in and of itself as the code is captured, recorded and stored on a device. The potential for the image file to be catalogued in the user’s media archive, to be shared and even reconstituted in another instance is then made possible. The end game of this evolution is a blended outcome which points to an almost infinite set of values rather than being wedded to just one proprietary system. Corporate data suddenly becomes dynamic, interpretative, loaded. While it still communicates important commercial information – perhaps something as banal as a tracking number – the data itself comes ready branded with layers of visual and cultural signification and therefore now operates as a culturally coded digital object.

However, what also separates the QR Code from previous iterations of symbolic identification is its hybrid functionality as a piece of information technology. While in most instances the code can be used to point the user’s device to a product on a retail shopping website it may also function to engage the user with the narrative of a product, brand or company. The Adidas QR Code points the user to a viral marketing site for their Celebrate Originality campaign (180LA, 2008) (see Figure 19) which enables the user to participate in the brand’s identity by uploading their own image and tag line to a website signifying their endorsement of the brand and thereby participating in the brand’s promotional narrative.¹⁰

¹⁰ While the majority of QR Codes in public spaces act as links to advertorial content or commercial enterprises the use of the technology has many diverse applications and can provide an entry point to a variety of content and more obscure cultural product. This methodology was employed for this thesis’ accompanying creative component, Dark Euphoria: UnClassified Media, in which QR codes were circulated in a variety of Australian
The use of photographic imagery, while still largely symbolic, is important in this context as the images themselves while perhaps purely aesthetic in their design functionality inevitably have their own rhizomatic structure representative of a wider cultural significance. The use of the image of Earth in the IBM QR Code is not only a powerful and evocative construct but is indicative of a wider signification of network technology and its close relationship to ecology and environmentalism. The long tail of what that image represents as a symbolic emblem of networked computer interaction has its beginnings in the mid-1960s. NASA’s Earthrise image (see Figure 18) hanging precariously in space was the galvanising image for the environmental movement and helped to spark a narrative of the image of the blue planet not merely as an object but as a cultural icon. While inspiring David Bowie, “Here I am sitting in a tin can far above the world, planet Earth is blue and there’s nothing I can do” (Bowie, 1969) it prompted Stuart Brand to utilise a similar image on the cover of his Whole Earth Catalogue (see Figure 22). Brand had started a campaign back in 1966 to encourage the and American cities to point curious flâneurs to the project’s website and supplementary theoretical content. The QR Code was also employed within the exhibition itself on each work’s didactic to give smart phone and tablet users the opportunity to read the artist statement and view the evolution of the art work online. For more examples of the creative and commercial uses of QR codes see the 2010 Cannes Golden Medal winner for advertising Hidden Sounds for Zoo Records an alternative music store in Hong Kong. More information on Zoo Records inventive use of the QR Code medium and the successful engagement with indie music fans can be found here. To bring the discussion of code branding full circle visit the Plurelle Productions YouTube channel here.
authorities to publish an image of the earth from space as he believed the image to be a galvanising concept. Knowing what a powerful effect this would have on society’s perception of the earth and themselves was clear:

...those riveting Earth photos reframed everything. For the first time humanity saw itself from outside. The visible features from space were living blue ocean, living green–brown continents, dazzling polar ice and a busy atmosphere, all set like a delicate jewel in vast immensities of hard–vacuum space. Humanity’s habitat looked tiny, fragile and rare. Suddenly humans had a planet to tend to (Brand, 2007).

The Earthrise photograph is iconic; perhaps the original image. As a visual motif, as song lyric, as appropriation on a magazine cover, it is an instructive example of an image with inherent meaning and value and an enduring narrative construct which can be powerful enough to change the manner in which a society sees itself and in many ways the human perception of reality. It should also be noted that the publication of this image, the Bowie song and the first editions of the Whole Earth Catalog preceded the Apollo 11 moon landing and the first testing of the APARNET by only a matter of months. This suggests that the interplay between network technology and cultural production was already well in train by 1969. From this point forward the visual motif of the Earth as a symbolic object grew exponentially, and like all feverish visual appropriations of the 1970s – the “I Love New York” logo, Star Wars figurines and side burns, Planet Earth was everywhere. The original power of the image has been reduced – literally – through its reproduction and reconstitution as a digital object in the new century. From the humble gasp of cosmic awe only fifty years previously a range of applications which have exploited the

---

11 See Fred Turner’s account of this period, From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network and the Rise of Digital Utopianism, (Turner, 2006) and interviews with Brand and John Brockman in the documentary Das Net (Dammbeck, 2003) (see video links on Page 215). Also, for an account of the intersection of cybernetics and systems theory within the 1960’s Avant Gardé movement, see Pamaela Lee’s account, Chronophobia (P. M. Lee, 2004) and Jack Burnham’s Beyond Modern Sculpture: The Effects of Science and Technology on the Sculpture of This Century (Burnham, 1968a).
image have instead engendered an ironic reversal, stripping the image of its potency. Planet Earth as digital icon has devolved from ecological end-game to an ergonomic interface, a mere pathway between virtual worlds.

In a similar manner in which Virilio cites the “reductionism” of society’s perception of science as a “techno-science” (Virilio & Lotringer, 2005) by peddling products rather than knowledge in a similar manner in which Microsoft peddles lifestyles rather than operating systems, this inverted narrative of the Earth has reduced the primacy of the most ancient and solid articulation of the real into a virtual digital object. From an environmental icon (“icon” in the classical sense) (Figure 18), to an object of artistic dreaming, to a symbol of economic globalisation, to a digital asset for the navigation of software (Figure 25) and finally to a graphical icon (see Figures 24 & 26) for the access and dismissal of network services the Earth image has taken on a dramatic reduction of scope and meaning. This presents an elegant metaphor of a systemic lowering of the panoramic horizon, or as Virilio refers to it, the transition to an “introverted narrative” (Virilio, 2007). For Virilio this act of reducing significance, of nullifying meaning, acts as a “relief” mechanism from the trauma of the image loop would otherwise engender. For Fredric Jameson it’s something more profound – a mechanical substitute. In a discussion of Walter Benjamin, Jameson writes that while Freud’s consciousness may facilitate the “defence of the organism against shocks from the external environment” Benjamin’s viewpoint of history through technological apparatus means that Freud’s mechanism becomes an externalised non-personal reduction:

Modern society, perhaps on account of the increasing number of shocks of all kinds to which the organism is now subjected, these defence mechanism are no longer personal ones: a whole series of mechanical substitutes intervenes between consciousness and its objects, shielding us perhaps, yet at the same time depriving us of any way of assimilating what happens to us or of transforming our sensations into any genuine personal experience (Jameson, 1971).
While this may provide relief from the emotional gravity of an event it also has the capacity to render evocative digital objects into meaningless one dimensional code. The ability to hold the earth in the palm of one's hand, swipe it off the screen or spin the globe with a flick of the mouse wheel has rendered the earth a mere assemblage of pixels at nothing more than a bit depth of either 1 or 0.

I see two belief systems that the art of our time may already be grappling with. One is simply the imagery of “information,” and the idea of the world being newly robbed of its spacetime materiality by a truly global, truly totalizing apparatus of virtualization. The world in the hands of the symbol-managers, if you wish to put a pessimistic spin on it; or the world laid open to the digital multitude, the great global community of hybrids and particulars, if you wish to buy into the utopia proposed lately by Antonio Negri. This is belief system one. You will see that it is, among other things, a belief about a new form of knowledge – a new means of materialization and dematerialization of labor. And at the center of the belief system is an image of knowledge visualized, taking place in screen space, and being altered in its very structure by that new placing and mobilizing, that new system of appearances. This leads straight to belief number two. It is simply the belief that some kind of threshold is being passed, or maybe has been passed, from a bygone world where the Word was the ultimate structure of knowing to one ruled by the image or the shifting visual array (Clark, 2000).

In the fractured culture of the new millennium where the values of the Cyber City are increasingly fluid, the translation of the analogue to the digital has altered our perception of the value and the tactility of not only cultural product but the fabric of the lived experience. The movie clip, the music sample, the image text, the logo and the vector have a fatalistic sameness. As does the YouTube diary, the status update, the check-in and the selfie. This not just a life digitised but information to be shared commercial products to be monetised and fresh content to be consumed. For the iUser – and more specifically the media artist – these digitised objects represent an opportunity to be remix to manipulate and to be share. And so with reduction of the blue planet to a 128x128 pixel icon there exists a payoff. Once the solidity of the real has been digitised – reduced, copied and vaporised – at the same instant it has become useful, malleable, and reproducible.

In this reflexive space the traditional modes of engagement have been superseded by more involved, interactive and participatory states of consumption. Every participant has the potential to become a node in the network flow of information; every participant has the potential to hold the world in the palm of their hand. Their relationship to their content is a trigger to move beyond the role of passive consumer to that of active user and thereby engaging with dynamic modes of
interaction – archival storage, feedback and paradoxically re-distribution.  

And as I investigate in further detail below, media artists and cultural participants have learnt to engage with a range of software and media technologies to participate in this dialogue of intersecting image streams. As Jack Burnham wrote of the early avant-garde in the 1960s, “they assume a span of problems more natural to architects, urban planners, civil engineers, electronic technicians, and cultural anthropologists. This is not as pretentious as some critics have insisted. It is a legitimate extension of McLuhan’s remark about Pop Art when he said that it was an announcement that the entire environment was ready to become a work of art” (Burnham, 1968b).

Indeed, work like that shown at the 319 Scholes gallery in Brooklyn and on websites such as Furtherfield and Hyperallergic at one time or another feature work which draws on range of multimedia skills and content which has been scraped, sliced and captured mid-stream from the network. Evan Roth’s *Internet Cache Self Portrait, July 17, 2012* (Roth, 2012), Lambda print face mounted on acrylic, dibond backing, 187cmx125cm.

![Figure 28](image)

Figure 28 Evan Roth’s *Internet Cache Self Portrait, July 17, 2012* (Roth, 2012), Lambda print face mounted on acrylic, dibond backing, 187cmx125cm.

The frustration of content publishers has been the vulnerability of the mechanisms of delivery which they see as an open invitation for the exploitation of their rights. The relationship between the music industry and their audience during this period of change serves as an illustrative example of how dramatically cultural consumption was influenced by digital technology and network culture. On the one hand this change revealed how content delivery can be liberated by the consumer’s negotiation of a new paradigm of access while on the other hand it was demonstrative of how publishers, distributors and vendors grossly mismanaged that change. This is dealt with in far more detail than is needed here by Jaron Lanier in *I Am Not a Gadget* (Lanier, 2011), Caleb Kelly in *Cracked Media* (C. Kelly, 2009) and Clay Shirky’s blog post which draws some startling parables between the evolution of the MP3 and MOOC courses, *Napster, Udacity, and the Academy* (Shirky, 2012).

---

12 The frustration of content publishers has been the vulnerability of the mechanisms of delivery which they see as an open invitation for the exploitation of their rights. The relationship between the music industry and their audience during this period of change serves as an illustrative example of how dramatically cultural consumption was influenced by digital technology and network culture. On the one hand this change revealed how content delivery can be liberated by the consumer’s negotiation of a new paradigm of access while on the other hand it was demonstrative of how publishers, distributors and vendors grossly mismanaged that change. This is dealt with in far more detail than is needed here by Jaron Lanier in *I Am Not a Gadget* (Lanier, 2011), Caleb Kelly in *Cracked Media* (C. Kelly, 2009) and Clay Shirky’s blog post which draws some startling parables between the evolution of the MP3 and MOOC courses, *Napster, Udacity, and the Academy* (Shirky, 2012).
of the archive being activated and repurposed as visual collage in a physical gallery space. My own work *Scream 2.0* (Goodwin, 2011) follows a similar approach, the resulting image a digital mosaic construction made up entirely from 649 profile images from my friend list on Facebook. Both works represent a technique of accumulation and repatriation – a genre of user generated media arts practice – employing sophisticated software to organise and/or manipulate a database of existing content to construct a representation of the artist’s personal network identity. Yet *Scream 2.0* is also a reflection of the appropriation of identity by social media corporations and their sponsors in which an individual’s visual image – and the identity of their family and friends are filtered into the image stream of online advertising in an unregulated commercial validation of their products and services. Just as companies and public organisations increasingly use the web as a database for unsolicited personal content the images *Scream 2.0* repurposes have been taken from the many – without permission yet with the parameters of access that Facebook’s privacy settings allow –reconstituting them into a whole as a technological extension of the collective social contract. However, while this image exploits a supposedly private archive of Facebook profile pictures the purpose of the work is to contextualise an animated response to the overwhelming nature of the network stream. It is a reflection, a reaction, the gothic high-tech trauma exposed. It is about and of the network and it signals an anxiety that network content engenders through the accumulative power inherent in visual collage techniques such as this. One could imagine, this image as a counterpoint to so

*Figure 29 Scream 2.0 (Goodwin, 2011)*
many of the catastrophes both real and imagined that the dark euphoric moment has presented at the millennial gates and beyond. There are many visual images that would fulfil that role, none more so than the montage *Grand Finale* (Fahnestock, 2010) produced by McLean Fahnestock. A visual assemblage of all 134 space shuttle mission launches between 1981 and 2010 *Grand Finale* is the counterpoint to Scream 2.0. I first witnessed this work at the Los Angeles Science Museum that now houses the Space Shuttle Endeavour after it was decommissioned in 2010. In the context of its display in the museum Fahnestock’s video is a celebratory work of human ingenuity and an exquisite document of our innate wonder of human exploration – and conquering – of the skies. A Futurist document to be sure. However, upon viewing the work one realises that one shuttle didn’t make it into earth’s orbit. NASA’s 25th shuttle mission flight STS-51-L, the Challenger mission of 1986, is included in the mix and provides a dark gothic counterpoint to the rest of the imagery that is so triumphant both in their majestic visuals and their nostalgic procedural tone. But when the other 133 shuttles have successfully escaped the earth’s atmosphere and continue on their flight path up into the heavens, we realise that one square video frame remains, the remnants of one vehicle’s flight cabin spirals back towards the earth amidst a trail of billowing white smoke behind it. This not only constitutes a literal return to Earth but the reduction of the gaze from the stars to the impact zone below. *Scream 2.0* is watching.

Much of the history associated with User Generated Content (UGC) in its purist form can be traced to the mid-1990s when net-art, website construction, cyber poetry, text and image posts
were the product of users with self-taught skills in basic coding and the rough edged tools of early open source software. These users were content creators who for the most part toiled away without any prior IT knowledge managing to manipulate and construct new media art without a template, without an uploader, without a Quick Guide, but solely with the assistance of the network itself. Olia Liliana and Dragan Espenschied in their text, *The Digital Folklore Reader*, argue forcefully for the recognition of the iUser as cultural generator. Indeed much of the language used to define *innovation* and *cleverness* in online environments - “intelligence on the edge of the network, many-to-many communication, open source” - point back to this recent history of network cultural development and UGC (Lialina, Espenschied, & Buerger, 2009).

These techno-linguistic principles have similar connotations in the physical infrastructure of the Cyber City. The evolution of transmedia events flow directly from these early networked roots, these include many practices we still recognise, such as viral memes, technical blogs, software tutorials, localised news podcasts, indie games, video remix, streaming music, graphic novels and indie film trailers. All of these digital objects have outlets in the Cyber City enclave and many have been skilfully re-imagined and re-purposed by corporate marketing teams to author widescreen techno-futurist dreamscapes. As Peter Lunenfeld observed in the melding of the architectural and informational space in contemporary urban environments, we can observe the commercial extension of social media and UGC in a heightened media presence in the domestic space. Lunenfeld maps this evolution from its agrarian origins to the “telematic” living/working environment of the contemporary domestic home:

Most recently, the growth of telematic technologies has made possible, at least for some, the rebirth of the home as a site of production. The home was integrated with the farm for millennia, and was both the shelter and the workplace. In the industrial era, the home was at first either refuge from or flop to recover in after the toil of the day. Later, after the introduction of broadcast media, the home became more and more the centre of entertainment and consumption... Interestingly, for the telecommuting classes and home office workers, domestic architecture returns to its agrarian past: contemporary living spaces are being designed as both work and living spaces (Lunenfeld, 2000, p. 103).

In the ten years since Lunenfeld made this observation the domestic space has evolved to be a site of commercial transaction and layered media consumption and repatriation - domestic-leisure-work-consumer node. Meanwhile cinema is compositing a much more Dystopian mixed media narrative that is also finding fulfilment in the urban and domestic space via cinematic proxy - think *Bladerunner* (Ridley Scott, 1982), *AI* (Spielberg, 2001a), *Code 46* (Winterbottom, 2003) and *Her* (Jonze, 2013) – media saturated futures not unlike our present. These two conditions – the personal


media space and the corporate entertainment space are our own creation. As Maurizio Lazzarato has observed, we have allowed “the world to happen” in this way, we have defined the city as such and the iUser as its key protagonist has morphed into the seductive hyper reflexive shell (Lazzarato, 2003). This may well be the seed of the anxiety which underpins the gothic high-tech – the relationship between the technology, the space and the Cyber City’s many connotations. Our response to it, our documentation of it and our contribution to its signification are all very much a part of an evolving media omnipresence. While the metaphysics of the space denotes something far more mysterious – the undeterminable height, the lengthening shadows, the tunnels of wind, the perpetual vulnerability, the obscured horizon – the *endlessness* of it all.

For the researcher in this space, the iUser’s interaction with media content and its many representations should not be solely perceived as engagement with technology as commodity but rather as Lialina, Espenschied, and Buerger have observed contributing to a dynamic living text. As Wendy Hui Kyong Chun has also identified: “[Software’s] ghostly interfaces embody—conceptually, metaphorically, virtually—a way to navigate our increasingly complex world,” (Chun, 2011). The aforementioned skill set of dexterity and creativity of the iUser then must be seen as the social media counterpoint to Virilio’s “lounge lizard” revealing themselves instead to be active participants in cultural exchange and the production of meaning. In this instance, the iUser is not a statistic, a data set, a demographic, an audience share, or click-count, but a representation of a greater whole - our very own personal namesake – through which the neo-gothic narrative is to be channelled.

Similarly the media artist who seeks to understand the dominant condition of the time should be equally comfortable in this space as observer, thief, creator and node. The aesthetics of computation, of communication, of speed and of virtuality need descriptors – signposts perhaps. Through new modes of media arts practice and experiments in visual communication design that people are developing a new aesthetic language via machine-like visions of the world. The interface, and therefore the computer, is coupled to this fantasy – as a tool and as a gateway – in its attempt to wrestle something real and tangible away from the Cyber City’s lengthening shadows. “In its unseeable, untouchable, and effectively unknowable nature, the computer represents the lens we need in order to think about the enormous and incomprehensible forces of social, economic, and political power that govern our lives” (Gollan, 2012).

As Katherine Hayles writes in her critique of Donna Harraway’s *Cyborg Manifesto*: “The characteristic dynamic of this formation is the penetration of computational processes not only into every aspect of biological, social, economic and political realms but also into the construction of reality itself, where ‘reality’ should be understood, as Haraway says in a different context, as ‘made’ but not necessarily ‘made up’” (Hayles, 2006). For Virilio this offers “relief” from the trauma of the
real while empowering the observer to become active participant, but similarly it can engender lethargy, anxiety and fear. For as Slavoj Žižek observes, “the Real which returns has the status of a(another) semblance: precisely because it is real, that is, an account of its traumatic/excessive character, we are unable to integrate it into (what we experience as) our reality, and are therefore compelled to experience it as a nightmarish apparition” (Žižek’s emphasis) (Žižek, 2002).

And so we return to Benjamin’s angel of history, wings unfurling and stretched Christ-like against the prevailing shockwaves of a century of incomprehensible horror and destruction. Amidst the crushing weight of evidence, unable to look around, but for a crooked neck bent incongruously towards the accumulating image streams below, the dark euphoria takes hold. The uncertainty begins.

///// 

The following chapter will examine the origins of this gothic temperament in the work of the Italian Futurists and their studies in synaesthesia and simultaneism. I will compare this to contemporary media artists Chris Cunningham, Aphex Twin and Amon Tobin whose work attempts to synthesise audio and video. I will relate this back to my own practice in the exploration of machine interruption and glitch art in one of my own works, Glytchaclysm. The advent of electricity and the commercial allure of electrification and the illuminated cityscape will also be explored to demonstrate Modernism’s fascination with artificial light and luminescence. Thomas Edison’s use of the moving image camera to first capture and then market the romance of electrification will be discussed as one of the first instances of the cinematic image being employed as a tool of techno-futurist propaganda.
Figure 30 Panel #3 from the Dark Euphoria series (Goodwin, 2011b)
The Emergence of the Digital Aesthetic

Living art draws its life from the surrounding environment. Our forebears drew their artistic inspiration from a religious atmosphere which fed their souls; in the same way we must breathe in the tangible miracles of contemporary life – the iron network of speedy communications which envelops the earth, the transatlantic liners, the dreadnoughts, those marvellous flights which furrow our skies, the profound courage of our submarine navigators and the spasmodic struggle to conquer the unknown. How can we remain insensible to the frenetic life of our great cities and to the exciting new psychology of night life: the feverish figures of the bon viveur, the cocotte, the apache and the absinthe drinker?

- Umberto Boccini, Carlo Carrá, LuigiRussolo, Giacomo Balla, and Gino Sereveni, in the leaflet *Manifesto Futurist Painters* first published as a in Milan in 1910 (Boccioni, Balla, Carrá, Russolo, & Sereveni, 1910)

This data is a new asset, you want it to be liquid and to be used.

- Sandy Petland, MIT Human Dynamics Laboratory, quoted in the New York Times article *Big Data Is Opening Doors, but Maybe Too Many*, March 23 2013 (Lohr, 2013)
From the outset of the 20th Century the bond between man, machine and industry was proclaimed as the zenith of human endeavour and the electrification of the city its greatest manifestation. From Marinetti’s “millennial gloom” rose the prospect of a new revitalised utopia wrapped in the gaudy blanket of the Futurist movement. The city, the real, the electric. This had been foreshadowed by the completion of the Eiffel Tower in 1887, its heroic debut at the World’s Fair of 1889, the birth of Modernism painting by the Fauvists at the Salon d’Automne in 1905, and of course, the publication of Marinetti’s manifesto on the front page of the French newspaper Le Figaro in 1909. Europe was the centre of the Modern, Paris its glittering icon, and Montparnasse, the hotbed of creative ferment (Adato, 2010). Here we find the origins of 20th century technological convergence - the verticality of the Eiffel tower, the glow of the street lamp and the marvel of manned flight.

For the Italian Futurists, this time of immense change was undeniably the future writ large; profoundly new and visually dramatic changes in urban space locked into the image stream of their consciousness as much as the synaesthesia of colour and sound and the cavalcade of poetic manifestos which would announce their intent.

Science and engineering had moved beyond the exclusivity of rarefied institutions and entered the cultural circles of artists, architects, poets and theatrical auteurs. The Futurists, equipped with the demystification of scientific and technological processes along with a greater insight into geometry and formal psychology reconstructed the everyday into a feverish interplay of shape and form, colour and light. The
mechanics of the everyday and the technology of the “modern capital” informed their work - and their audiences - to the possibilities inherent in a technologically progressive future. Form played an important role, as the Futurists extended upon the Impressionist and Pointillist works of the late 19th century – in as much as Picasso and Braques were doing with their Cubist work – and set about reconfiguring their own practice to accommodate new modes of representation. As Umbro Apollonio states in his introduction to a recent collection, The Futurist Manifestos:

... suggestions and reflections on the growth of scientific and mechanical ideas were no longer an absolute novelty. Studies in dynamics – in full progress at the time - together with speculations on the dimension of time, no doubt also had their effect on artistic ideas. And it was not without reason that visual artists showed a great interest in the theatre, in forms of live entertainment, and in the cinema – expressive techniques in which rhythm and movement, both in objective representation and indirect evocation, are of the essence (Apollonio, 2009).

This convergence of disciplines, this interplay between genres of art production and a growing awareness of the sciences is reminiscent of the emergence of media arts practice a century later. As Brian Eno recently declared, “Here I am an artist – who reads mostly science books – like most other artists. I know very few artists who read books about art” (Eno, 2011, p. 61). The interplay of art and science and of philosophy and technology heavily influenced the compositions and subject matter of the Futurist painters. Yellow Dancers (1912) by Gino Severini, Dancers & the Spring I (1912) by Farncis Picabia, Horizontal Construction (Horizontal Volumes) (1912) by Umberto Boccioni and Nudes in the Forest (1909) by Fernand Lerger (Ottinger, 2009) share an obvious influence with the Impressionist, Divisionist and recent Fauvist past yet they hint at the possibilities of a new form of dynamic movement born from Cubism which liberates not only the human form from two dimensional representation but colour and light as expressions of the body electric. Here the use of abstraction - the reconfiguration of perspective, vivid tonal contrast and the interpretation of the human form in movement (and repose) - demonstrate a duality with the more kinetic interpretation by the Cubists. This reading of the possibilities of representation inspired the Futurists to move beyond the limits of the human form to an interpretation of machine technology - the street, electrification, heavy industry and mass transportation – permitting a vivid imagining of the rapid technological evolution of the modern European city.

The influence of dynamics and the live performative arts can be seen in the vibrations of sound and the illumination of electrification. In Giacomo Balla’s Rhythm of a Violinist (Balla, 1912) for example, the violinist’s hand becomes dynamic, the previously unseen ‘frames’ of movement – as would be evident in a similar cinematic sequence – is captured within one single frame (see Figure 32). Visible too is the sound, the vibration evoked in the frenetic composition of the image, giving a
sense not only of movement and form but the unseen aural composition. Luigi Russolo’s iconic 1911 work, *Music* (Russolo, 1911) (see Figure 33) takes this one step further with his exploration of synaesthesia in which associations between the senses – taste, touch, sound - are represented by colour, shape and repetition. The piano player is seated – or perhaps he is standing – his hands move briskly across the keys as the composition swirls into the auditorium around him. Expressed with bold reds, greens and yellows even the faces of the audience are enamoured – and in some cases aghast - by what they are hear, their towering forms surge to the music’s spell. The music becomes a dynamic visible entity, dominating the image. The pianist, although central to the composition emphasised by rings of circles converging into the background behind his head, is in silhouette, his hands multiplied across the keyboard, his head blurred between two moments (or frames) of action.

The achievement of this construct of synaesthesia is the ability to evoke not one moment but an evolving succession of frames and through the use of repetitive shapes and colour to denote sound in a visual motif. As Boccioni and his collaborators explain, “In order to make the spectator live in the centre of the picture, as we express it in our manifesto, the picture must be the synthesis of what one remembers and of what one sees.” (Boccioni, Carrá, Russolo, Balla, & Severini, 1912, p. 47) The technique is particularly evocative when translated to the contemporary video form, most
obviously VJ mixing and video mapping accompaniment to live music performances, and within the context of the single channel video frame, the music video clip. Through the use of technology artists can play with Boccioni’s notion of what one “remembers” and what one “sees” by slicing the sensation of sound and vision into interchangeable units of time.

Chris Cunningham, a British video artist who was trained in advertising is renowned for his refined yet challenging works that explore the synergies between the visual image and its musical accompaniment. One of his most powerful constructs is his music video clip *Come To Daddy* (Cunningham, 1997) for the electronica artist, Aphex Twin. Here the links with the Futurist synaesthesia aesthetic are most evident. Cunningham deploys a variety of techniques to mesh the drive of the music and its occasional interventions of noise and electronic missives with his heady mix of visuals. Narrative devices are suggestive at best as the video operates on various dissonant layers: signal interference, static impediment of the image and didactic symbolism. This is high-end commercial video technique meets industrial electronica – colours are de-saturated, a tone of abandonment exists within the frame and between the cuts, the bleak isolated setting of the English tenement
blocks is palpable, all now familiar aesthetic tropes of this genre of English film making. The video’s premise features an old lady walking a dangerous looking pit-bull through the dilapidated ruins of the Tavy Bridge Shopping Centre in Thamesmead, London. From the dark pockets of the ruined multiplex emerge a small group of schoolgirls with ghoul like facial features carrying a TV monitor which acts as both visual device through which we see the vocalist’s twisted visage and a literal construction of the clip’s tele-matic horror. But what makes this video so emblematic of the Futurist technique is not only its use of synergetic editing to evoke synaesthesia like sensibilities, but Cunningham’s willingness to damage, cut and subvert the genre’s clean aesthetic edge with generative swabs of colour and abrupt interventions of static and machine-like interference.

![Figure 35 Still frames from Come To Daddy (Cunningham, 1997)](image)

This technique mixes the kinetic vibrations of Balla’s *Rhythm of a Violinist* and Russolo’s *Music* to dramatic effect, subverting the properties of what is essentially a linear format in a brutal non-linear fashion. The literal representations of the audio track are also evoked through the closing sequences of the clip when the terrified and disorientated old lady is confronted by one of the most ghastly of Cunningham’s manifestations, a thin ravaged ghoul-like mother figure of the rampaging schoolgirls. And as if to articulate the most violent interdependence of organism and machine this

---

13 For further evidence of this see one of Cunningham’s contemporaries whose two films, *Trainspotting* (Boyle, 1996) and *28 Days Later* (Boyle, 2002) evoke a similar aesthetic while elsewhere Cunningham’s work for Playstation and Bjork adds a technological veneer to the darkness.
alien creature initially emerges slug-like from the screen of the TV monitor born from the deep bass tones of the audio – a symbolic representation of the image as much as it is sonic provocateur. While their confrontation could be read as the culmination of whatever narrative may exist and a searing diegetic illustration of the music’s apocalyptic crescendo, it is nonetheless one of the most exemplary distillations of contemporary video’s synaesthetic renderings.¹⁴

Yet also inherent in these images are moments of simultaneism - the flicker and static of the digital display device - the very elements of image reproduction rendered fragile, traumatised by the ferocious tone and frequency of its aural companion – a clear nod to the signal disruptions of Nam June Paik, Gary Hill and Bill Viola. In the bottom right image of Figure 36 we can even see that the frame has been clipped with this interference, as if the image itself cannot help but shudder and dodge the dimensions of the enclosing aspect ratio of the frame itself. As the sequence closes out we catch glimpses of the urban decay. There is no light, no witness, no end to the location’s ruinous visage but instead the image itself becomes an evocation of the devolution of screen fidelity by the electrical instrument - the monitor, the TV, the CCTV camera, the magnetic tape – all of which preside hauntingly over the final moments of this gothic high-tech construct of electronic music’s

¹⁴ Two other examples come to mind here, while not as sophisticated as Cunningham’s Come To Daddy but still formal experiments in synaesthesia, are Michel Gondry’s video clip for The White Stripes, The Hardest Button to Button (Gondry, 2003), and Gondry’s clip for the Chemical Brothers Star Guitar (Gondry, 2002).
disgruntled – yet symbiotic – relationship with machine vision. While the set piece here is the transmogrification of an old electromagnetic television set into something bestial – a primordial chrysalis which emerges from the screen and transforms into a toxic shimmering gargoyle - the message is simple: the music is tearing the screen apart.

Wolfgang Ernst is very clear that there exists a separation between the medium and the cultural product - that the cultural artefact is entirely separate from the medium’s channels which allow its passage. Content operates on human historical time while the signal, and the channels which permit passage, are operating on machine time. For Ernst and Félix Guattari in particular there exists an entire epistemology around the aesthetics of the signal (Guattari, 1995). Jussi Parikka, Ernst’s translator for the English edition of Digital Memory and the Archive, defines this as aestheticotechnics: “It is less about the objects of or in those channels than about the operations that introduce the patterns, pulsations, and intervals through which information becomes a reality of the channels before becoming a reality for the phenomenological viewers, listeners, or readers of media” (Ernst & Parikka, 2013).

For Ernst the technological frameworks have more aesthetic appeal than any metaphor or semantics which could be attributed to what is being transmitted, it is Claude Shannon rather than Marshall McLuhan who is the technical father of modern media culture, and that Manovich was right when he declared in 2001 that “the logic of the database replaces that of the narrative in digital media” (Manovich, 2001). The very fabric of the media channel, the properties of its signal and the
machine time of their translation form the basis for various modes of technical disruption explored by contemporary media artists. Indeed, to disrupt the system – to mess with the signal – could well be the product of an ever increasing interest by artists and researchers in what Parikka and Ernst define as their aestheticotechnic.15

However, while more traditional investigations into this technical framework in the 1960s and 1970s by artists such as Nam Jun Paik who worked with modified video equipment and manipulated video signals and John Cage’s electro-acoustic explorations and prepared piano experiments deal with this aesthetic directly, a new set of concerns would appear to be motivating contemporary practice.16 The hidden, elusive – “black boxed” – nature of a medium’s technical framework, the marketing discourse around image definition and screen resolution, the rapid decline of chemical and mechanical modes of art making, the politics of bandwidth and the influence of hacker and maker communities all would seem to be likely motivators in the context of this discussion. These factors – and the more enveloping conditions proposed by Sterling and Virilio and Žižek – differentiate the new digital aesthetic of the culturally coded object and the technical framework of a strictly technological medium.

My image series, Glitchacy使命 (Goodwin, 2011c) from the Dark Euphoria collection, is an example of a genre piece that interrogates the technical framework of video playback and display. Yet this is not necessarily a controlled outcome, the nature of the intervention is mostly software based and the results unpredictable – what Caleb Kelly has identified as a “malfunction” (C. Kelly, 2009, p. 211). But we might also describe it as a technique, a deliberate intervention known more generally as glitch art. As Rob Myers explains, “Art makes invisible order tractable by making it

15 There is a strong tradition of electronic and signal interventions within video art from the 1960s onwards, beginning with Nam June Paik’s Video Tape Study No. 3 and Electronic Fables and continuing with works such as Katsuhiko Yamaguchi’s Image Modulator and Gary Hill’s Electronic Linguistic. Each of which address the medium and the signal itself in the structure or content of the work. This is reflected in contemporary modalities by glitch artists, circuit benders and datamoshers in which the tradition of technical intervention and interpretation for aesthetic affect has a new digital context. In addition to this, musicians and sound artists working with noise and sound manipulation such as Ben Frost, Trent Reznor, Aphex Twin and Radiohead echo this philosophy in their work and concurrently with that of their image manipulating collaborators.

16 The interventions of artist David Hill on Scotland’s BBC in the 1970s represent a similar site of manipulation which questions the structure of the media on the medium itself. TV Interruptions (Hall, 1971), was a series of short video art sequences – a tap filling the screen with water, a TV burning in an open field – which were inserted into the normal TV broadcast by the BBC without any formal announcement or closing credits. As Hall later observed, “These transmissions were a surprise, a mystery. No explanations, no excuses. Reactions were various. I viewed one piece in an old gents’ club. The TV was permanently on but the occupants were oblivious to it, reading newspapers or dozing. When the TV began to fill with water newspapers dropped, the dozing stopped. When the piece finished normal activity was resumed. When announcing to shop assistants and engineers in a local TV shop that another was about to appear they welcomed me in. When it finished I was obliged to leave by the back door. I took these as positive reactions” (Hall, 2005).
visible. Glitch aesthetics are interruptions of the hidden technological order that reveal its operation through its failure” (Myers, 2013b). The Glitchaclysm series of images however are less a reference to the medium of their production and transfer, but rather the context and mode of their display and the culture in which they were formed. The final images – while technologically self-referencing – are heavy with the accents of the techno-futurist narrative and produce a bright gaudy abstract re-assemblage of the original data. Because this process exposes the fabric of the moving image, albeit
damaged, the RGB properties of the digital image become pronounced, chaotic and abrasive an
event that is altogether in keeping with the Futurist’s dramatic primary colour experiments,
themselves abstract interpretations of colour and form. The difference being that with the digital
image there are infinite possibilities inherent in the one object, and that object comes from the stuff
of other objects – information. As Benjamin Schultz-Figueroa notes, writing in *Culture Machine* (pdf):

> As humans rely more on digital sources of information, and as machines allow for
> more agency in adjustments of this information, humans interact less with the
> world than they do with the machine’s possibilities. Unlike film, whose
> photographic process creates an imprint of an actual world, tweakable through
> developing techniques but essentially an index of the time filmed, the digital
> image is infinitely malleable, convertible into an endless variety of formats,
> codexes, and calibrations. In an image being constructed pixel-by-pixel it is
> possible to enhance, alter, or delete down to the minutest detail, an unlimited
> ability to abstract the outputted image from its referent (Schultz-Figueroa 2011).

The signals in *Glitchaclysm* are generated from an archive of MP4 files of disaster and
apocalyptic films which I catalogued during a content survey for my *Dark Euphoria* exhibition’s
central piece, the video supercut *My Endless Dystopian Summer Blockbuster*. The disruptive effect
works particularly well with MP4 files as errors in the display codec expose the interpolation of one
video frame with another random future-frame a little further along in the sequence. If the video is
paused or the play head is manipulated across the video stream in a certain way unintended image
constructions are born creating a heightened sense of the original sequence, or in this case – if we
remove any reference to the original film – an entirely new and unintended arrangement of data.
This is the image as accident, this is the pulling apart of perception, like the Futurists, like Braque,
like Picasso. As Rosa Menkman has observed of Virilio’s critique of 20th Century art - that it has been
“terrorised by the last century; it has been devastated consecutively by the two World Wars, the
Holocaust and nuclear power” (Menkham, 2011, p. 32). This is reality smashed apart by the horror of
the technological accident and that art plays an important part in reconstructing that reality:

Virilio explains how WW1 blew reality into pieces and how the cubist painter
Georges Braque collected those pieces and put them back together, not just as a
formalist experiment or as a destruction of perspective but as an artistic realism
appropriate to the techno-cultural present... In the digital realm, what has come
to be known as glitch art deals with the digital dimension of error, accident and
disaster from different angles, within a larger context of cultural meaning
(Menkham, 2011, p. 31).

---

17 A similar process with the same outcome is known as datamoshing and is much more dependent on a
calculated intervention from the video artist (see Figure 39).
And so it is with the contemporary media artist working with disruptive code, with corrupted data, malfunctioning codecs and error ridden machine equipment. The glitch is the reconstitution of the high definition video signal, reality's best simulation. In an age when image fidelity and high resolution image reproduction is the main game, these wildly incoherent – yet oddly satisfying – digital images subvert this agenda and aestheticize the vulnerability of the video codec and resonate in a culture that is itself broken. What the viewer is left with then are barely visible hints of the apocalypse, a vague portent of a future end-of-days scenario witnessed through a veil of corrupted code. The well-ordered structure of the video signal rendered chaotic and imperfect by “malfunctions, faults, breakdowns, aneurysmal ruptures” (Baudrillard, 2005, p. 127). Perhaps we can determine the splash of an asteroid, is that a splice of DNA or a string of viral computer code? Is that who we think it is, riding bareback in the shadow of the Statue of Liberty?

While the music video clip is a well-developed art form and the likes of Chris Cunningham – and his contemporaries, Spike Jonze and Michel Gondry – are regarded as some of its most skilful exponents, the single channel video form remains classical in the sense that it is framed by the boundaries of the screen. Restricted to the compression of the moment and the linear sequence of time it is essentially a 2D construction that cheats perspective with manufactured depth. This exemplifies the genius of the Futurists – and similarly Picasso and Braque before them - that they could so skilfully articulate similar variations in time, space and form within the restrictions of the painted canvas – upon one panel, within one frame. But a more complex visual form is emerging, a progressive articulation of the marriage of sound and vision driven by software and the relative affordability of display technology: projection mapping. This technique commonly involves the processing of multiple video signals designed to project precisely onto a unique physical surface and arranged for the explicit purpose of accompanying a diegetic audio track. There have been numerous recent examples including corporate promotion pieces for Samsung and Toshiba by NuFormer, Perspective Lyrique by 1024 Architecture, and Lighting the Sails on the Sydney Opera House and 555 Kubik on the Kunsthalle in Hamburg by Urban Screen. These works are an extremely powerful blend of the physical space and the body electric in which light and colour and sound seemingly subvert the dimensions of the real. They are startling to witness live and are designed to exploit the properties of the physical space and are typically staged in outdoor public events. The works can be delicate whimsical performances or large ostentatious commercial constructions.
As an extension of what Cunningham achieved within the confines of the 2D form and to build upon what Balla and Russulo were striving to achieve with their theories of simultaneity and synaesthesia respectively, the ISAM project by Brazilian electronic musician Amon Tobin and his visual collaborators is an immensely satisfying blend of the aural, the physical and the electric. ISAM was originally conceived as a concept album, in Tobin’s words “a re-ordering of things around me” via the recording and the tight intricate mixing of captured audio samples into a fifty minute “sound sculpture” (Tobin, 2011). Immediately, one recognises that this is something different – sound reconceptualised and nature captured, filtered and cloned by the machine. To experience this live – as a performance – would require an extraordinary visual accompaniment.

The ISAM tour of 2011-2012 was designed by Heather Shaw of Vita Motus Studio in collaboration with Vello Virkhaus of V Squared Labs. Built from a series of large cubes, much like Russulo’s pianist in the Music from 1911, Tobin is surrounded by the blips, scratches, beats and drones of his music as they are mapped onto the surfaces and edges of the staged set. Tobin is in the centre, placed behind a silk screened box in which he orchestrates live percussion and the mix-up performance of his sonic industrial/nature collision. But the graphical designs are not simply diegetic, they do not just evoke the movement or dynamism of simultaneity, they reverberate beyond the frame, beyond the stage. The light is liquid, electric, and not only following the contours of the set but also subverting it via circular curves and patterns somehow visually expressing the

Figure 41 ISAM by Amon Tobin, Heather Shaw and Vello Virkhaus at the Camp Bisco XI Festival (Ninja Tunes 2011)
audio which, in the Sydney Opera House where I witnessed the work, was all consuming. This is Boccini’s “intoxicating mix”; this is synaesthesia writ large in one of contemporary performance’s most celebrated sites, this is Russulo’s Music also set in an opera house – the pipes, the vertiginous height, the cathedral type reverence. The fact that Tobin’s work is such an aurally prickly industrial interpretation of his environment, that the visuals are the electrical manifestations of what is a very technologically dependent production process makes the entire project a thoroughly Futurist exercise – in a very classical sense. The hues, tones and preference for light over dark strongly echoes the chromatic paintings of Delaunay and the fascination with electric light – both literal and metaphorical – which so enchanted the Italian Futurist painters and poets of the early 20th Century.

As an art form, projection mapping is not just a diegetic accompaniment to music but a liberating force that merges the image and sound both technically and conceptually via a bristling luminescent synergy. This evolution in live performance, projection technology and sound design signals a significant cultural shift in the theatre of audio visual performance just as the advent of electricity altered the aesthetic and the tone of the streets of the World’s Fairs of Paris, New York and Chicago a century before. It was during this period that artists responded to the technology and used its beauty and mystery to communicate meaning, form and narrative in their practice. Just as Balla’s _Rhythm of a Violinist_, is an attempt to capture and communicate the rhythm of a concert performance so to would the Futurists be equally fascinated by the potential poetics of electricity. This invisible force – much like music – which had become such a vibrant and dynamic part of the Modernist streetscape inspired artists like Carrá, Boccioni and Stella to produce powerful articulations of the beauty and romance of this new technology. Here light takes on an exaggerated tone, evocative of the tonal qualities of fire – in both hue and contrast – the Futurists attempted to capture every flicker of artificial light. In some instances their work was a throwback to a fractured pointillist style largely abandoned by the early 1900s as they strived to capture the multitude of light sources and their layers of reflection as they clashed and comingled in the dynamic interplay of direct and indirect electrical ambience. This effect was evoked literally in Balla’s early celebration of light and machinery at the Exposition Universelle in 1900 in his work, _Luna Park in Paris_ (see Figure 44) (Ottinger, 2009, p. 89). Here the foreground and surrounding night sky form an encircling black canvas as the sparkling merry-go-round assumes the movement and machinery of urban modernity which would become the focal point of so much of the Futurist’s oeuvre. For Balla, the electric lights of _Luna Park In Paris_, “seemed to him to be one of the most lyrical manifestations of technical and scientific modernity” (Zippilli, 2009). And so too in Carrá’s 1911 work _Nocturne in Piazza Becarria_ (Ottinger, 2009, p. 93) (see Figure 45), the Piazza and the evening crowd are reduced to a shadowy
landscape, the figures but vague silhouettes as the electricity produces a rich carnival of light. Again the light becomes the dominant feature of the image rather than merely a function of illuminating a subject taking on the properties of an overexposed photograph in which the foreground action is washed out by the bright tones of the electric lamps. Where the Impressionists were concerned with the interpretative depiction of light for Carrá and his contemporaries it was also the movement and the metaphysics of light that most challenged them. As declared in _Futurist Painting: Technical Manifesto_, “your eyes, accustomed to semi-darkness, will soon open to more radiant visions of light. The shadows which we will paint shall be more luminous than the highlights of our predecessors, and our pictures next to those of the museums, will shine like blinding daylight compared with deepest night” (Boccioni, Carrá, Russolo, Balla, & Severini, 1910, p. 27).

Similarly, Boccioni’s _Forces of the Street_ from 1911 (Ottinger, 2009, p. 139) raises the viewer’s point of view high into the streetscape thereby making the refraction of the street lamps the primary focus of the image and suggesting the sensation of being
hoisted aloft a camera crane so we become assimilated into the image’s cinematic design of electric lamps and steel (see Figure 46). Yet here the streetlight is cool and temperate in tone, almost neon in its steely complexion so rather than providing illumination the electricity reduces our visibility of the surrounds and becomes the focus of the composition. A lone pedestrian moves past the yellow warmth of a doorway, yet the figure is in shadow, drawn as it is against the ambient light. In these images light is instructive, not merely for the sake of composition or as a device to assist in narrative construction, rather it is the dominant ontological force — a highlight, a beacon, a signal for what lies beneath. A light filled luminescence upon an otherwise dark and cold streetscape.

The inspiration of this approach reaches back to the Paris boulevards illuminated by the arc lights of Russian engineer Paul Jablochov in 1867 that in turn sparked the ambitions of other urban thoroughfares in Europe and the United States throughout the 1870s and 1880s. The World’s Fairs and Expositions during this period were fantastical showcases of technological suprematism attended by thousands of people on both sides of the Atlantic. And while these gatherings were patriotic affairs demonstrating the creativity and innovation of nation states, new developments in agriculture, transportation

Figure 45 Nocturne in Piazza Becarria (Carra, 1910)

Figure 46 Forces of the Street (Boccioni, 1911a)
and engineering, it was the wonders of electrification that became the centrepiece of the attraction. Light, which on this scale had previously been associated with some form of combustion or fire, and therefore signalling danger, had not been witnessed in such a welcoming context before and therefore prompted a high degree of wonder and excitement:

The realisation that steadily burning bright light drew a crowd inspired promoters of all kinds – particularly the owners of department stores, theatres, and amusement parks and the organisers of world’s fairs. The Paris Exposition of 1878 closed at dusk, but in 1881 an exposition in the same city drew crowds at night with 1300 arc lights. After 1881 all fairs emphasised dramatic lighting, and many made illuminated towers their central symbols – obvious examples are Buffalo’s Electric Tower (1901), San Francisco’s Tower of Jewels (1915) and New York’s Tylon and Perisphere (1939). Most of the innovations of electric technology, including the electric sign, the flashing sign, the electric fountain, the searchlight, the spotlight, and the floodlight, were first displayed at world’s fairs (Nye, 1994).

At the 1901 World’s Fair in Buffalo, New York, known as the Pan-American Exposition, the controversial inventor and self-promoter Thomas Edison sent his camera operators James White and Edwin S. Porter to document his latest triumph, incandescent light. A glittering show was designed by the Fair’s promoters, The City of Living Light, which illuminated the buildings, thoroughfares and most predominately, the suitably named Electric Tower with 350,000 incandescent light bulbs. Yet it is the Pan-American films themselves that are the most startling documents of this event. Mostly shot at night and initially designed as promotional collateral for Edison Inc. the renditions of these gaudy displays capture in stark contrasting black and white the properties of contained electric light. For the exposition attendee (and we can imagine the Futurists across the Atlantic at the fairs of Europe) such a scene represented a technological feat of what must have been a thing of immense marvel and wonder on the level of the CGI dreaming of epic science fiction cinema, of

![Edison's Greatest Marvel](https://example.com/edison-vitascope-advertisement)

**Figure 47** Advertisement for Thomas Edison’s Vitascope (Metropolitan Print Company, 1896)

---

18 For an in depth account of Edison’s incandescent light shows at the Buffalo fair see the chapter The City of Living Light in Kristen Whissel’s Electric Modernity and the Cinema, 2008, Duke University Press. For extensive archival film documentation visit the Library of Congress’ [online repository](https://example.com).
large scale projection mapping and the space porn of the Hubble telescope’s images of deep space today. Edison’s films represented the first time many American audiences outside of New York and Chicago were able to live the experience of electricity and its luminescence. The fact that they did so through the cinematic form is worth noting in terms of this discussion because it signals the origin of the corporate tendencies of the techno-cultural narrative. For the images that were distributed carried the Edison brand – in both the system of delivery (the Edison Manufacturing Co.) and the subject matter (the Edison Electric Lamp Co).

However, the aesthetic properties of these images are also instructive. They depict a dazzling array of illuminated orbs, which through the limitations of the acquisition equipment used to capture them on film, have the effect of throwing the background and surrounding fixtures into a stark soupy blackness. The light, which does not illuminate but shines, shines with a cheerleading brightness for its own technological triumph, is certainly representative of a larger narrative construct than its apparent initial ornamental function. Here the light is the subject, the foreground and the background, without depth, without a horizon. The light is emblematic of an unseen process, a property of magic. Rather than revealing the nature and texture of the physical object the images reflect the aesthetics of shape and form while negating its substance.\textsuperscript{19}

\textsuperscript{19} Examples of these two counterpoints are prominent in latter cinematic history in which the technology is fetishized at the expense of substance through the use of light as an external representation of an internal logic. Particularly obvious examples can be found in science fiction films of the late 1970s as computer generated assets begin their transition into popular entertainment. See \textit{Rollerball} (Jewison, 1975), the light and dark metaphors of the original \textit{Star Wars} trilogy (Lucas, Kershner, & Marquand, 1977-1983) and the neon blue aesthetic of the \textit{Tron} films (1982 and 2010).
Through their cinematic rendering of the Pan-American’s electric light displays, these panoramic films simultaneously enacted and aestheticized technological modernity’s transcendence of the natural order through electricity’s disassociation of light from time. As visual documents of American technological modernity, they reveal how elaborate displays of night-time illumination at world’s fairs and expositions created idealised forms of machine-made night-time vision that demonstrated and celebrated electricity’s ability to extend human perception across space and time (Whissel, 2008, p. 120).

This machine induced sensory myth making fits neatly into the foundations of the techno-futurist narrative. Through Edison’s camera lens, onto Edison’s film, Edison’s other commodified “invention”, we catch a glimpse of the future through a marketing device. And yet at the same time the duality of the moment is represented by what the physical manifestation of electrification meant to the turn of the century public and ultimately what inspired the verve of Futurist’s literature and their raucous use of colour and form.

The representation of theatre goers in Carlo Carrá’s Leaving the Theatre (1910) (Ottinger, 2009, p. 155) is exemplary of this verve for electrification: by shifting electric amplification to the human condition the subjects in the frame become fiery avatars of Modernity. Here too the scene is the celebration of nightlife – and the possibilities of nocturnal electrification – which sees the human
figure absorb the electricity of the night and in so doing illuminate the street with their own luminous display. No longer was it appropriate, “to see the human face pink, now that our life, redoubled by noctambulism, has multiplied our perception as colourists... The human face is yellow, red, green, blue, violet” (Boccioni, Carrá, et al., 1910). The association with the dramatic live moving arts is also brought into question here as the dynamics of the La Scala performance and the distillation of meaning and narrative it portrayed are signified by the internal monologue of the snow bound audience. Here the invisible becomes visible, the human consciousness becomes electrical energy.

Perhaps the most telling rendering of this notion of the interior monologue of the crowd and the abstract dynamics of speed and urban modernity emerges in the triptych by Umberto Boccioni, States of Mind from 1911 (Ottinger, 2009, pp. 123-127). This is represented by three panels in which the middle panel The Farewells is flanked by two contrasting panels, Those Who Go on the left and Those Who Stay on the right. Boccioni, clearly influenced by a recent trip to Paris and the work of Picasso and Braque, is in a sombre Cubist mood here.

Although dealing directly with well-worn Futurist tropes such as the machine and the notion of speed by depicting the imminent departure of a locomotive – the black bristling steam engine, the strikes of line denoting movement and imminent change, the receding city of factories and apartment blocks – what dominates this sequence are
the emotions associated with such an event. With this triptych, Boccioni had “renewed the Futurist enterprise: it was no longer a matter of just depicting the speed of the machine or the effects of light, but of transcribing the movements of the soul at the heart of a separation punctuated by three related circumstances (The Farewells, Those Who Go, Those Who Stay) which are each the subject of a picture. The railway station, the train, the journey which all refer to themes which are dear to the Futurists, present the meeting between man and the mechanised world” (Morando, 2009, p. 123).

Passenger and well-wisher, locked in an intimate embrace in The Farewells, are cut adrift by the steam from the locomotive and the burning ambience of a red lamp. A dirty hue of green is all that Boccioni will allow for the figures on the platform, their construction is typical Cubist fare, yet their embrace is whipped up by the steam and light in a soaring display of emotion. In the left panel, Those Who Go, the colours are muted as the train heaves away from the static confines of the platform – telegraph wires above, the city shrinking in the distance – as the passengers, illuminated in the cool interior of the machine, lapse into peaceful hibernation. Here we can almost see the glow of the electronic device, the faint blue ambience of the LCD screen that preserves their link with the past while anticipating the impending resumption of life further down the line, while the figures in the last panel, Those Who Stay, seem almost doomed by their separation from the locomotive and those it carries towards their onwards journey and the future. The third panel is also emblematic of a theme which Boccioni saw as a “fundamental motif of modern life experienced as a state of mind ... the feelings of sadness and loneliness, while civilization progresses in the tangled swarm of the metropolis” (Ballo, 1964). This is emphasised by the distinct absence of light, ambient or otherwise - an anomaly in the Futurist canon and the drooping low rise apartment blocks, their windows dark and mysterious, or perhaps just miserable – lurking in the distance. The central figures of the composition, heavy in their winter suits and coats, recede into the gloom, their minds a swirling antennae of geometric shapes – receiving, emitting, archiving.

While States of Mind may prove an exception to the rule as far as the Futurist colour palette goes, it is significant for my purposes as it represents the two elements of the Futurist manifesto preceding WWI. As evocative exponents of technological suprematism and in the dynamic representation of the psychology and the science of the unseen, the Futurists profoundly foretold the Utopian tendencies of 20th Century technoculture. And while far from being marketeers of technology, the Futurists do use the text of their manifestos and the imagery of their rich compositions to celebrate the object of the machine. This is evidenced by the presence of the technological object in their works - the car, the boat, the railway and the street. But they also give

---

20 Possibly only matched in tone and solemnity by Fernand Léger’s Nudes in the Forest (1911) and Luigi Russolo’s Solidity of Fog (1912).
life to the unseen – the glow of the electric lamp, the vibration of sound, and the code of the telegraph. The interpretation of the physical and virtual space through synaesthesia and simultaneism perhaps their most enduring legacy. These visual representations of the physical and the virtual are important narrative plot points for this study – enablers if you will for the construction of a visual narrative that begins with the Futurists and the films of Thomas Edison and endures for more than a century. The artefacts are both aesthetically light and vibrant but also representative of an evolving symbolic darkness which emerges in the depiction and marketing of technology and its associated electrification.

/////  

When contemporary visual artists such as Cunningham and the designers of Amon Tobin’s ISAM production skilfully exploit notions of synaesthesia through those very same vibrations, those very same electrical charges of the Futurist oeuvre they manage to continue a tradition of making the invisible visible, of reconstituting the virtuality of the Ernst’s “medium” – via something as banal as a video signal, or a sound frequency or an electrical charge – into a dark euphoric image construction. What is also occurring however is the inadvertent design of what has become an enduring template for the exploitation of this tradition of technological amplification in the commercial image design and product narratives of the contemporary technology company. In other words, the Futurists inadvertently set out a persuasive blueprint for the ensuing techno-futurist narrative and ultimately the emergence of a new digital aesthetic in cultural production that has both a light and dark side.

In this chapter I have signalled the very early emergence of the light on dark aesthetic via the early work of the Italian Futurists who depicted the thrill of electrification both literally and metaphorically. This is most strongly represented in the works of Umberto Boccioni, Carlo Carrá, and Giacomo Balla. We have seen how in 1901 Thomas Edison used the public’s enthusiasm for electrification at the Pan American exhibit in Buffalo, New York to commit to film the light on dark aesthetic for the very first time. By putting the viewer inside the notion of electrification, Edison used the cinematic medium to amplify the techno-cultural narrative by promoting his own technology and public stature.

I will demonstrate in the next chapter how the World’s Fair of 1939, also in New York, would deliver the techno-futurist narrative in its most explicit form via corporate propaganda films by Chevrolet, General Motors and Westinghouse. We will also see how this practice has been continued today by tech companies and software publishers in the promotion of machine intelligence, software speed and advancements in communication technology. Through the use of symbolic aesthetic
devices such as primary colour relationships, forms of animated electricity and visual metaphor
contemporary advertisers and their clients are promising a bright progressive future space. I will
compare these contemporary practices with another group of works by Robert Delaunay
concentrating on his exploration of chromatic colour and the Italian Futurist’s experiments in
simultaneism particularly the works by Umberto Boccioni confirming the link between early 20th
Century Modernism and the techno-cultural narrative of the new millennia.
Figure 54 Promotional photograph by Murray Korman for Salvador Dali’s *Dream of Venus* pavilion at the 1939 World’s Fair in New York (Korman & Dali, 1939)
Sometimes at night I lie awake in the dark and try to recapture the vision and the sound of The World of Tomorrow. I try to remember how the pastel lighting glowed on Mad Meadow in Flushing: soft greens, orange, yellow and red; blue moon glow on the great Perisphere and on the ghostly soaring Trylon. I think with a sense of sweetened pain of nights when I sat by Flushing River and saw The World of Tomorrow reflected on its onyx surface, in full colour, and upside down...


The riot of colour and the swirling circular shapes of Delaunay’s painting and that of his Futurist interpreters, particularly Boccioni and Carrá, form an important pathway to the representation of software processes, image reproduction and wireless communications in the Cyber City. Understanding the depiction of the physical and the virtual in a way that moves beyond the Cubist play on perspective and representation and becomes a celebration – if not a propaganda tool of technological invention itself – is vital in this context.

If we return to Delaunay’s early sequence of studies of chromatic painting based on M. E. Cévreuil’s theory of simultaneous contrasts, we can see that the dramatic use of primary colours in contrast and in symmetry with shape and movement convey an eerily familiar visual iconography. In Circular Forms, Sun No. 2, from a series of works completed in the summer of 1912 (Ottinger, 2009, p. 215), Delaunay attempts to portray the array of colours he witnessed in his “retinal reactions” upon closing his eyes after staring intently at the midday sun. Here we can see the contrasting polychromatic colours of yellow, red, blue and green set in a circular motion, the planes of colour representative of the prismatic view of the sun’s “disk shaped
blotches” (Sonia Delaunay in Popelard, 2009, pp. 214-215). The study of colour, of light and of movement is central to the Futurist theory of simultaneous expansion, in which light is a “sensation”, its parts a distillation of form and the composition itself a “synthesis of what one remembers and what one sees” (Boccioni et al., 1912). These notions will become important when dissecting the operational metaphors at work in contemporary advertising and technology schematics of software, communication protocols and consumer electronic products nearly a century later when concepts such as “background operations”, “faster than light”, “simultaneous processes” and “time machine” recall these conceptual and sensual theories of colour, space and time.

Delaunay and Boccioni were the primary exponents of this theory of psychophysical simultaneism. Boccioni was by far the more provocative champion of the wider Futurist ethos as articulated in both the text The Exhibitors to the Public (1912) and in person via his well-documented lecture in Paris accompanying the Italian Futurist’s exhibit in 1911. However, his most evocative representations of the Futurist mantra and his most profound explorations of the concept of simultaneism were in his paintings. Simultaneism was a complex idea which owed as much to Einstein’s Special Relativity theory (1905) – in which two events could take place in the same space – as it did to the Cubist experimentations of Picasso and Braque. Boccioni expanded upon this concept further to give dimension and representation to the human consciousness as illustrated by his 1912 composition, Simultaneous Visions (Ottinger, 2009, p. p135). Here he differs from his onetime teacher Balla, who employed repetition to express movement and dynamism (see Figure 56).

Instead Boccioni “sought a much more synthetic form, a single image which could express the fusion of the object and its surrounding environment” (Coen, 1988, p. xxx). Simultaneous Visions is the visual representation of this new refinement to the Futurist Manifesto and is an interactive template for the evolution of the movement. The composition features a female figure leaning out of an apartment window; her face as seen from two perspectives, looms large in the image as the sounds and clamour of the street below rise in a twisted verticality which pervades the confines of the room. As one of Boccioni’s first attempts to fully depict the essence of his theory of simultaneity, it is far more evocative of the form than the similar construct, The Street Enters the House from 1911. Simultaneous Visions plays on the idea of the window as a gateway to the inner and outer dimensions of physical space as well as the ferment of consciousness and the inner soul of experience. The fragmentation and intersection of reality is at once cubist in composition but also echoes his earlier explorations of Divisionism.21 The work also provides a telling glimpse of the

---

21 It is in these shards of the real and the dynamic, the reflected and the simultaneous that we can see similarities with more contemporary media works by Olivier Ratsi such as the Anarchitecture series (Ratsi, 2011) and the Huang Shan series (Ratsi, 2013). Eduoard Salier’s brutally dark urban fragmentation in Massive
emergence of military imagery in the Futurist oeuvre with what appears to be the depiction of a tank (Figure 56 Top Right panel) followed by uniformed personnel (Figure 56 Bottom Right panel) parading through the streets. It provides a salient visual cue of the interconnectedness of military technology and the omen of war which foreshadows much of the ensuing millennia’s techno-cultural narrative. It is important therefore, in the context of this discussion, that the political and social conflict that was manifesting in Europe at the time this work was being produced is also a force at work in the Futurist’s narrative exposition. The stubborn march of imperialism and the rise of nationalism provided an ominous background to the Futurist manifestos in their language, tone and zeal. Much like the spectre of war which loomed large at the World’s Fair in 1939, the fall towards global conflict was rapidly accelerating during this period. In September of 1911 the Italians declared war on the Ottoman Empire and invaded the Ottoman provinces we now know as Libya. The Italo-Turkish War would last until October 1912 and in a symbiotic relationship with the

Futurists’ love of flight and verticality; it was the first conflict to feature aerial reconnaissance by aeroplane and the first recorded aerial bombing of enemy troops. It was also the first recorded

Attack’s promo clip for Splitting the Atom (Salier, 2009), Max Hattler’s “Analogue Futurism” video experiment AANAATT (Hattler, 2008) and Sheldon Brown’s pioneering work for the Experimental Game Lab at USCD, Scalable City (Brown, 2008) are also important examples.
incident of an enemy plane being shot down in a military conflict. This air war provides an early intimation of the neo-gothic narrative counterpoint to the techno-futurist dreamscape beginning to emerge as a genuine fear of humankind’s mechanical intervention into the skies.

The Futurist’s were above all story tellers, they used their skills to convey meaning and most importantly to demonstrate to the viewer how they saw their world. The virtues of a mechanised future were undoubtedly at the core of many of their works but it was their mastery of re-framing of perception, of exploiting the primary colour palette and manipulating the possibilities of composition that were their signature triumph. The connotation of the window as a framing device for instance is a technique widely used by the Futurists, Boccioni in particular and later Frenchman Robert Delaunay, to persuade a viewer of a work to submit to the perceptual depth of their compositional structures. Exploiting this as a vantage point from which to explore the cross-plane dimensions of space and light is a recurring theme in the Futurist canon. This is evident in Delaunay’s 1912 composition *Simultaneous Windows on the City* (Delaunay, 1912a) which provided the inspiration for the poem by Apollinaire, *The Windows* (1912). A far more abstract endeavour than Boccioni’s piece, Delaunay provides a perceptual depth to the room from which we view the world beyond. The vibrant chromatic colour envelopes the viewer, the perceptible brightness of the urban vista beyond the window’s frame is within our grasp, the soul of the city and the song of its inhabitants spill across the dimensions. Apollinaire describes this world beyond the window frame as both a “gigantic trauma” and a “glittering diamond” in which the window “opens like an orange / comely fruit of light” (Apollinaire, 1912, p. 26).

Indeed the central motifs of the Futurist oeuvre can be seen through this prism of both an enveloping trauma of political upheaval with accumulating military conflict and the glittering objects
Figure 58 Collection of details from Italian and Russian Futurist works grouped thematically in rows by visual references. **First Row L-R:** *Electricity and Artificial Light* [Boccioni (1911) *The Forces of the Street*, Giacomo Balla (1909) *Street Light*, Natalia Goncharova (1913) *The Electric Light*]. **Second Row L-R:** *Flight & Verticality* [Delaunay’s *Homage To Bleriot* (1914), *Tour Eiffel* (1911) *Sun, Tower, Airplane* (1913)]. **Third Row L-R:** *War and Weapons* [Severini’s *Armoured Train in Action* (1913), *Plastic Synthesis of the Idea of War* (1915) *Gun In Action* (1915)]. **Fourth Row L-R:** *Speed and Transportation* [Russolo (1912) *Dynamism Of A Car*, Del Marie (1913) *The Port*, Boccioni (1911) *States of Mind* I – *Farewells*].
of technological change and invention. In essence there was every reason to believe that Europe and indeed the Americas were experiencing deep social and industrial change as the new century severed the future from the past and presented a “dawn of a radiant new day”. Through this prism – through these windows of gold, of accented verticality and fresh perceptions – the likes of Cara, Boccioni, Marinetti and their peers felt the enormity of this brave new vista in which “electricity and telegraphy, steam and aviation” were the glittering new diamonds of human endeavour as science crept into all corners of modern life completely remaking the “mental fabric of the world” (Boccioni, 1911b, p. 231). The Futurists used these brave new icons of industry – electricity, human flight, war, and mass transportation systems – as icons in their work (see Figure 58). They symbolised an obvious break with the past and a vivid evocation of the technological progress which they could pitch to their critics, their artistic contemporaries (in France, Russia and Britain) and the wider public. They achieved this primarily through the colour and form of their visual constructions in which Futurism’s ideological agenda was delivered.

If we are to assume meaning in these images as textual objects then it becomes apparent that the core provocateurs of this form were deeply committed to a wider techno-futurist agenda. Boccioni was enthralled with the verticality of the cityscape, of human flight and the centrepiece of a modern progressive Europe, the Eiffel Tower (see Figure 58 Row Two); Severini captured the symbolism and the energy of war, even embedding textual slogans into the works themselves (see Figure 58 Row Three); while others like Russilo and Balla fetishised electricity and the illuminated streetscape (see Figure 58 Row One). And all the while they trumpeted a separation from the past, demanding that their work, their energy and their focus was on the magnificence of the present, the “genius” of the Italian intellect and vision and the technological future it foretold with little time for those whose work did not “correspond with the pulse of the times” (Boccioni, 1911b, p. 231). The Futurist’s use of colour and symbolism, their interpretation of the Cubist and Divisionist technique and their homage to the Impressionists were all grounded in an effort to propagate a celebration of technological determinism and the future it was in the process of authoring – if not interpreting – for their audiences. This is a clear and instructive precursor to a narrative construct built into a genre of Modernist visual culture that foregrounds both the trauma and the evangelistic ideology proffered by the contemporary techno-futurist narrative a century later. As we will see, these recurring themes and visual motifs replayed themselves throughout the 20th century via visual culture’s central narrative forms: cinema, television, advertising, and news media. Familiar western-centric tropes, with a predominately American voice, lie at the heart of this contemporary Futurist

__________________________________________

22 Futurism of course was not solely a visual movement; it also engendered entirely new forms of poetry, theatre, music and dance.
movement – a corporate-media-technological-collective, if you will – who have used the pairing of technology and visual culture to promote and ultimately market the idea that the gateway to a technological utopia is the consumption of and participation in that narrative construct. Elements of culture, propaganda and technology would move from the periphery of industry, of worldwide conflict, from science and economics and from nation building to the heart of consumer culture. The stuff of contemporary art, of media production and pop culture would become electrified, intelligent, helpful and dangerous. Cultural production and its products would cease to exist as merely aesthetic objects, or icons of historical meaning, but would evolve as consumer products and lifestyles embedded with techno-futurist narratives.

The practices of advertising companies, consumer electronics manufacturers and software publishers – all of whom employ vast numbers of willing, diligent and highly skilled artists and designers to promote and disseminate new technologies and futurist lifestyles – are central players in this narrative. They rely on familiar techniques: the use of colour and symbolic shape as metaphor for the exposition of the human consciousness, symbols and icons for the machinations of network technology and colour, light and animation techniques to evoke concepts such as speed and intelligence. For the most part, these technologies are inherently present in electronic products yet for practicalities of design and usability are mostly unseen and only vaguely understood by the majority of users. In this sense, advertisements by the likes of Microsoft, Google, Adobe, AOL, Nokia, Sony, General Electric, Samsung and others employ sophisticated visual constructions to communicate complicated ideas and to embellish the futurist manifesto of contemporary consumer culture. The corporate branding of the information economy in particular is a strong subscriber to the early Futurist’s oeuvre both in tone and visual construction, while the language evokes these tendencies with a very 21st Century brevity.

Futurist manifestos of the early 1900s – often long, sometimes poetic, raging polemics – are reduced in the new millennia to a one line slogan, a tag line, a sound bite, an animated gif on a website, a slide in a slide projector, an infographic in a corporate video: “Where do you want to go today?” and “Be What’s Next” (Microsoft Corp, 2010) encourages an aspirational Microsoft; “Fly Into the Future” suggests General Electric while assuring us that their “Brilliant Machines Are Transforming the Way We Work” (Akos & Laszlo, 2012); Samsung’s venture into lifestyle design with a device that is a “Life companion” with the ability to “Create the Future” while providing “for a richer, simpler and fuller life” (Cheil, 2013b); while Apple Corp, always with one foot firmly planted in the future, boldly proclaims that “The Future Is Here” (Apple Corp, 2001). Similarly, manufacturers of imaging technologies and communication protocols for the US military employ Futurist hyperbole
to spruik their wares citing themes of speed, futurity and vision: “Accelerating Tomorrow” and “Location. Attitude. Speed” appear on Lockheed Martin’s YouTube channel (Lockheed Martin, 2012) while “Tomorrow’s Technology Today” (Raytheon Company, 2013b), “Defining the Future” (Northrop Grumman, 1994) and “Smarter Solutions for Smarter Visions” (Xilinx, 2013) are a sample of the branding collateral of these large technology manufacturers with lucrative contracts in the defence, transport and civilian security industries.23

However, for the moment, it is the visual iconography that is most pertinent to this relationship with the Futurist aesthetic. Microsoft’s use of the window to navigate applications and open up new vistas is clearly evident in the design of its logo and the animated sequence of its operating system upon machine start-up (Microsoft Corp, 2001-2012). Here primary contrasting colours are used to symbolise multi-tasking, variations in application usage and the more abstract

---

23 This is significant as these companies represent products and services with a global reach and large market capital in their respective sectors. Apple is the largest company listed on the US Stock Exchange while Samsung has emerged as Asia’s largest electronics manufacturer. While the likes of Lockheed Martin, Boeing, Northrop Grumman and Raytheon Company (along with General Dynamics) represent the top 5 contractors to the US government. Data based on US government reports between 2009 and 2011 (Wikimedia Foundation, 2013). Current figures put their collected contractual value at US$110 billion. Exact figures for profits and contractual figures from 2011 can be found at the SIPRI site (Stockholm International Peace Research Institute, 2013).
functions of the computer’s contemporary iteration as a mobile, multi-function, media production tool. Further to this, the last iteration, Windows 7, features an animated start-up sequence which utilises a swirling array of pin points of coloured lights. These emerge from the soupy black screen as if issuing from a darkened corner of the universe to form the now familiar Windows logo (Jerome, 2009) albeit steadily pulsating as if to denote the coming to life of the “tiny brains” and the groaning cogs of the machine. The original Windows XP logo of 2001 (see middle image Figure 59), which all subsequent logos have been based, represented the gateway to the “intangible truth of interior worlds” where “XP” denotes “eXPerience” and the discreetly rendered squares of colour – yellow, blue, green and orange – provide the symbolic reference point for the user-machine interface (Coen, 2009). This of course is an extension of the attributes of the two aforementioned paintings from 1912: Robert Delaunay’s composition Simultaneous Windows on the City and Umberto Boccioni’s Simultaneous Visions. Both of these images explore simultaneism in the perceptual depth beyond the window frame while simultaneously reflecting that experience back into the room itself. Here the experience goes beyond the iconography of the Windows logo as the viewer, or in this case the user, is beckoned through the symbolic window to the universe of possibilities beyond: the simultaneity of software multitasking, the viewing and examination of a wide spectrum of visual, textual and aural content and the “limitless” potential to create and design new ideas. All of this via the symbolic Microsoft window and all through the primary colour palette of red, green, blue and yellow pixels. As was the case with the chromatic painting experiments of Delaunay in which the composition of light and shape was as much a science as the tonal mix of the oil paints themselves, here the icon of the window – and therefore the branding of the software company – is an exaggerated representation of the technical process involved in the display and presentation of that image: the RGB colour space.

There have been many interpretations of this concept in Microsoft advertising over the years but it was the launch of Windows XP that was a truly ubiquitous phenomenon; this was pre-mobile, pre-Apple’s device orientated resurgence, pre-Facebook – the dawn of the Web 2.0 internet era. The windows metaphor and the connotations of height, flight and virtuality were still fanciful concepts that had exploitive currency and therefore represented a classic epoch in the late technofuturist narrative. If Paul Virilio’s gaze has been subsumed by the horizon in the second decade of the new millennium, it was still peering upwards in 2001. In the weeks that followed the events of

24 While the image making of “lifestyle” products by Apple will be expanded upon further below, it is worth noting that the default screen saver for Apple’s OS X consists of swirling tentacles of bright contrasting colours reminiscent of the aurora borealis. This animation has a metaphorical function similar to Microsoft’s start-up sequence, as the frame of the computer screen transforms from a two dimensional surface to a multi-dimensional space experience.
September 11 Apple introduced the iPod, the device that would literally flip the iUser’s attention inward by providing a revolutionary technology to shut out the encroachment of reality and shut out content outside of their rarefied ecosystem. At the same time Microsoft executives were busying themselves for the release of Windows XP with a video advertisement that emphasised flying, verticality and the magic of invisible technologies (see Figure 61). The XP series of commercials were designed as a genuine attempt to codify the online behaviour of computer users the world over through techno-futurist dreaming – the “edit”, the “mix”, the “share” – coupled with the ability to skip, jump and to ultimately “soar” high above the clouds gazing upon green fields below and new horizons beyond the dust and the ash of Manhattan.

Figure 61 Microsoft commercial for the launch of Windows XP (Microsoft Corp, 2001).
Google too makes use of a similar chromatic palette in the design of its web search tool branding and in particular its web browser *Chrome*. Here the window is the gateway to the world beyond the screen – real, analogous and fictitious – and the *Chrome* logo clearly evokes Delaunay’s experiments with simultaneism and chromatic painting (see Figure 55). The circular structure of the logo provides a compositional link to his series of *Circular Form* studies and extends upon it to include depth and three dimensional space so typical of Web 2.0 iconography (see Figure 60 Bottom Row).\(^\text{25}\) To reinforce this notion an in-house production team at Google Japan created a stop animation advert (Google, 2009) for the launch of the *Chrome* browser consisting of wooden blocks which are manipulated by an invisible force to eventually mimic the interface of the browser. Here the palette of the Futurist chromatic colour scheme is most evident as the primary colours represented by building blocks which constitute the abstract notions of search and the broad spectrum of the possible results. Further to this, in May 2010, Google released a promotional video (Google, 2010) dramatically illustrating the relationship between software search technology and the concept of speed. In a sequence of “tests”, the load times of various web pages are measured against the performance of various backyard measurement devices – variously a potato gun, a loud speaker and a simulated lightning strike. Captured with a Canon Phantom v640 High Speed Camera at 2700 frames per second the first sequence of the video depicts a potato gun shooting a potato through a vegetable slicer across the face of an LCD monitor which is simultaneously loading a web page. As if in an

\(^{25}\) The origins of the Google Chrome logo are an interesting case in point. The *webosphere* has attempted to decode the logo into its various parts by graphically linking the logos various elements with well known and obscure pop cultural moments. The glowing blue orb at the centre of the logo has been attributed to the HAL 9000 computer from the film *2010*, the sequel to *2001: A Space Odyssey*, and the composition of the logo has been linked to a webcam, the logo for *Pokemon Pokeball*, the 1980s consumer electronics toy *Simon Says* and the logo for an obscure office application *ThinkFree Office 3*. 
attempt to demystify the mathematical complexity of screen response times, internet bandwidth and search algorithm technology the mechanism for firing the potato is a complex arrangement of DIY domestic objects. A salt shaker falls onto the “trigger”, the spark ignites a fuel of vapour, the potato is ejected through a vegetable slicer which sprays the raw potato slices across the face of the screen to finally land in a deep fryer where we presume they will transform into perfectly cooked French Fries, Google style. However, it is the 3rd example in the Google Chrome Speed Test promo video which is truly evocative of the Futurist ethos and the underlying darkness of the technoculture narrative (see Figure 64).

In this sequence a bolt of lightning is generated by a SG10 rotary sparkgap tesla coil, which destroys a small model sailing ship all in the time it takes for a web page to load from a local hard drive. The elements of the video are an intriguig blend of Modernism and nostalgic symbolism. The key prop is a device, a tesla coil, which is so named after a vivid icon of the Futurist oeuvre. The key moment of the clip is the destruction of a model sailing boat as if discarding the past to make way for Boccioni’s The Port from 1911. The video clip appears to be proclaiming a

Figure 64 Frames from the Google Chrome Speed Test commercial video in which the speed of a lightning bolt conducted from a tesla coil to a grounded model sailing ship is measured against the loading of a web page in the Google Chrome browser.

26 Nikola Tesla is often cited as one of the fathers of electricity for his work on refining a power system using alternating current (AC). In his time Tesla was often in direct conflict with his former employer and the much more entrepreneurial Thomas Edison who commercially – and historically - tends to overshadow Tesla’s considerable achievements. Tesla’s theoretical work in developing methods of radio transmission are also of some note however they too are overshadowed by the more famous exploits of Guglielmo Marconi. For an incisive account of the race to electrify America and the world, and the exploits of Nikola Tesla, Thomas Edison and George Westinghouse in particular, see Jill Jones text, Empires of Light (Jonnes, 2003). The debate surrounding the validity of both Tesla’s and Edison’s achievements is hotly contested online and a good flame war springing from a post by an online comic and an ensuing article by Forbes columnist Alex Knapp can be found online here.
Futurist manifesto of its own: with analogue destruction comes celebration of the supremacy of mechanical power, mass transport and mass communication. The whole production has an odd mechanical feeling about the visual “experiments” while the closing image of a plastic model sailor singing triumphantly on the shoreline, is surely a nod to the speed and absolute colonisation of the online search industry by the video’s authors, Google. Its simplicity is a complete contradiction to the sophistication of the technology it seeks to illuminate, while the destruction wrought by the electricity is in itself a primary indicator of a darker tendency in the media constructs of this genre.

Honda, manufacturer of engines, domestic farm machinery, cars, motorbikes and formula one racing cars has also employed the retrograde approach for the marketing of its 2003 Honda Accord in the short film *Cog* (Bardou-Jacquet, 2003), a promotional spot only ever screened once on British television yet a viral sensation on the web. In this elaborate Rube Goldberg-like construction, parts from a disembodied Accord are used to illustrate the car’s apparent machine intelligence.

The band OKGO became an Internet sensation when their video clip, *Here It Goes Again*, went viral in 2006. Featuring one continuous take of the band performing a tightly choreographed routine on a series of treadmills the video is more comment on the machinations of the music industry than it is on machine technology as such. However the video which they designed with Los Angeles art collective *Syn Labs* to

---

27 The band OKGO became an Internet sensation when their video clip, *Here It Goes Again*, went viral in 2006. Featuring one continuous take of the band performing a tightly choreographed routine on a series of treadmills the video is more comment on the machinations of the music industry than it is on machine technology as such. However the video which they designed with Los Angeles art collective *Syn Labs* to
Beginning with a transmission bearing rolling along a plank and knocking into another component and thereby setting off a chain reaction of carefully orchestrated events the two minute sequence consists of Honda parts knocking into one another, falling, rolling, tripping switches, igniting batteries and setting off sensors through to the final reveal of the new edition Accord with the tag line, “the Power of Dreams.” The commercial’s subtext seems to proclaim: This technology is here now! This is our utopian promise to you. But rather than explanatory voiceover, the film is silent except for the clinks and taps of the various parts as they come into contact with each other before the final sequence sets off the Accord’s in-car sound system components. Rather, the message is embedded in the image and the “life” that the car’s components appear to conduct of their own accord. Here the “tiny robots” are the sensors which open a window when it is tapped, set off lights on a rear view mirror, set off the window wipers which scurry across the floor when water is squirted onto a moisture sensitive windscreen and finally the keyless remote which automatically shuts the Accords hatch. Accepted technologies for sure, but the rationale is the same, there is something hidden and amazing within the design of ‘our’ devices, that is intelligent, that is in control of the functions it commands and is to be trusted to deliver the appropriate response. They also secure life within its proud solid frame and are engineered to ‘anticipate’ and ‘respond’ when required to do so.

These video sequences of the behind the scenes machinations of web search technology and environmental sensors of contemporary car design are reminiscent of other earlier 20th century attempts to illustrate ‘hidden technology’ processes by simplifying the viewer’s understanding of what remains unseen. The art works of Fritz Kahn, a German author and physician, make use of industrial tools and common domestic objects to illustrate the machinations of the human body’s internal organs. In Kahn’s 1926 plate, Man As Industrial Palace, the processes of ingestion, the circulatory system, the respiratory system and the repatriation of nutrients from the digestion of food are represented as mechanised processes of industrial technologies and Fordist factory work ethics (Debschitz & Debschitz, 2009). In Henning Lederer’s 2009 animation of the Man As Industrial Palace (Lederer, 2009), each part of the ingestion process is brought to ‘life’ as man and machine collaborate in the management of mind and body in a claustrophobic assembly line reminiscent of promote their follow-up album reflects this process of mechanisation but also has strong synergies with the visual motifs of the Delaunay’s chromatic painting and his exploration of circular forms. Reminiscent of the Honda Cog commercial, the OKGO clip featured a Rube-Goldberg machine whose components filled an entire warehouse. While the machine by its very nature is an elaborate construction designed to perform a very simple task, the visual construction of the sequence – again in one take – is both a deconstruction of the chromatic colour palette as it is of the interior monologue of the musician as a music industry construct. The technology of music construction and the machinations of the music video as a marketing tool are embedded into the sequence as a visual critique of these processes.
the unseen processes of Modernist industrialisation – machine manufacturing, subterranean mining and textile production. In a twist on *Metropolis* (Lang, 1927) the underclass are internalised cogs in the machine of man as the cyborg of technological triumphalism takes on a clunky mechanical appearance reminiscent not of an approaching future but a rapidly receding past. Office workers pull levers, sort printed data trails and snap photographs to facilitate the functioning of the human brain, elsewhere levers, pulley systems, pumps and steam engines are operated by overall clad factory workers to facilitate the digestion of food, the circulation of blood and the absorption of oxygen into the lungs and blending elements of Kahn’s original sketch and the now familiar particularisation of contemporary image making and data visualisation methodologies.

Thirteen years after Kahn’s famous illustration the 1939 World’s Fair became the mid-century touchstone for the technocultural narrative and the symbolic birth place for consumer culture on a mass industrial scale. Here America’s engagement with the future was writ large, not by government, science or academia, but by the corporation. It is a future branded by cars, domestic efficiency, streamlined mass transportation, designer

---

**Figure 66** Der Mensch der Industriepalast (Man As An Industrial Palace) (Kahn, 1926)

**Figure 67** SONY PS2 “Head” print advertisement (TBWA, 2006)
cities and invisible technologies. If the Italians had the Futurist movement, America had the Fair. Affectionately known as the *World of Tomorrow*, “the sounds and visions” as observed by New York Times journalist Meyer Berger were romanticised by designers, architects and politicians. Luminaries such as HG Wells and Einstein were drawn to its beacon of progress and prosperity. It played host to many examples of contemporary image making in relation to new pre-digital technologies shaping modern domestic life. The television, washing machines, fluorescent lighting, air conditioning, nylon, the fax machine, pre-packaged frozen meals and the microwave oven all had their public debut at the 1939 Fair. Grafted onto a gigantic rubbish dump in Flushing Meadows New York, the World’s Fair was a propaganda tool for American industry and was designed to present a template for an American future to a population still picking itself up from the dust bowl of the Great Depression and living with the ominous spectre of Fascism’s march across Europe. The fair was marketed with enticing slogans such as “the world of tomorrow”, the “dawn of a new day” and the “fair of the future” and was designed to exhibit a tangible future via carefully crafted exhibits, public appearances by artists and intellectuals, corporate sponsored promotional films and the physical layout of the site which featured locations such as ‘Democracy’, ‘City of Light’, ‘House of Magic’, ‘Pleasantville’, ‘Liberty Lake’ and ‘Constitution Mall’. All of this provided the attendee with a view of an idyllic – if somewhat homespun – modern and technologically-evolved American future. The fair’s organisers and sponsors were committed to the themes of “scientific rationality, technological progress, modernist aesthetics, (and) industrial design”, a continuation of the Modernist mantras from the *Century of Progress Exposition* in Chicago in 1933. “Increasing consumer prosperity and a positive view of corporate capitalism, these fairs both expressed and helped consolidate the emerging cultural logic of 1930s American modernism” (R. Bennett, 2010, p. 177). Only two years away from being drawn into the world’s second ‘great’ war which was already well under way in Europe, the Futurist narrative on display in New York was not a collective push for ideological determinism by a nation state as their Italian counterparts had foreshadowed prior to WWI, but instead the 1939 World’s Fair was a domestic commercial propaganda enterprise on a massive scale. Inward looking rather than outward looking, it provided a weary America with an “escape from the imperfections of present life into an ideal future” (Nye, 1994, p. 204). Funded by large corporations such as Consolidated Edison, General Motors, Chevrolet, AT&T, General Electric and Westinghouse Electrical, the agenda was not merely to display their ingenuity but to interpret “the future to the American public, telling them that the long depression and the danger of war could be overcome and that a utopian future for their children was achievable.” Moreover, “the fair had to address this uneasiness. It could not do so by mere appeals of patriotism, by displays of goods that many people
had no money to buy, or by the nostalgic evocation of golden yesterdays. It had to offer temporary transcendence” (Nye, 1994, pp. 204-205).

On the surface the fair was an odd mix of politics, technology and fantasy. By design a modernist wonderland built quite literally upon the ashes of the past. The site, now known as Flushing Meadows, was cleared from the old Corona Ash Dumps - the “valley of ashes” described by F. Scott Fitzgerald in *The Great Gatsby* (Fitzgerald, 1968) itself a tale of renewal and slippery facades. The fair promoted a myriad of cross-genre cross-cultural iconography, developing a form of stage managed marketing and multimedia trickery that would evolve to become a typically American style of product integrated entertainment. The Fair’s pavilions were a pastiche of pop-art and high-art in which Salvador Dali designed a gaudy pavilion for his exhibition, *Visions of Venus* (see Figure 68C), science fiction illustrator Frank R Paul (see Figure 68B) provided early sketches for potential pavilions, the fictional comic book character Superman appeared in person for the first time (see Figure 68J) and then in print via a commemorative World’s Fair DC Comic with fellow super heroes Batman and Robin (see Figure 68K). A key attraction in the Westinghouse Corporation’s pavilion was the 7ft 120kg automaton Electro the Moto Man and his companion Sparko the Moto Dog (see Figure 68L). Electro was a mechanical device, he could not perform tasks or act independently, his gigantic frame concealing the gears and pulleys that enabled him to move, an air bellow that mimicked breathing and a 78-rpm record player that allowed him to utter some 700 phrases. According to the New York Public Library, Electro was capable of performing “dozens of mechanical tricks including walking, talking, smoking a cigarette, and counting on his fingers” (New York Public Library, 2011). Elsewhere the carefully stage managed exhibits, such as the House of Magic produced demonstrations of electricity, magnetism and radio waves that melted, fried, cooked, suspended and powered various objects and devices but was more sleight of hand than real science. This “apparent magic heightened the appeal of the technological sublime, investing the corporation with supernatural powers” (Nye, 1994, p. 216). And the sales pitch worked. The 1939 World’s Fair set in train vast commercial industry populated by new domestic appliances that would become household staples, new supply chain networks to support their distribution, sales and repairs, transportation industries for cargo and people, new content streams for television networks and an all pervasive advertising industry to keep the whole system turning over. This continues today in an albeit more sophisticated form that preaches social harmony through technology, new interactions delivered by super devices with super functions, new content through tailored channels with tailored stars, new ways of learning, new ways of seeing the world, new lifestyles and better future. As Bruce Sterling noted, “you can’t believe the possibilities, it’s like anything is possible” (Sterling, 2009). This is the conceit of technoculture, this is the flipside of the dark euphoric fall. And this is
why the distraction of the 1939 World’s Fair put a temporary distance between the American public and the horrors of Europe’s decent into total war.

“Lacking Europe’s more immediate experiences with the darker side of modern technology, the fair’s Americanised modernism tended to fetishize technology as a simple panacea and promote naive machine age fantasies” (R. Bennett, 2010, p. 184). However, in keeping with Apollinaire’s Futurist schematic of the traumatic and the fantastic, the 1939 fair blended an ironic tapestry of technological dreaming and sinister foreboding. Appearance by noted celebrities and cultural icons were played out against the backdrop of an encroaching war – one that America seemed destined to join – and the creeping dawn of the nuclear age. “One by one the foreign pavilions erected by European governments began to represent nations that, for all practical purposes, no longer existed: Austria, Belgium, France, and Poland, among others; each nation’s collapse ringing like a death knell in the ears of the American public” (Mauro, 2011). The future it seemed was both a cultural commodity and an unnerving glance back into the past, a dark euphoric moment codified in the cast of historical figures who were on hand to enthral the crowds. The fair was opened by President FD Roosevelt author of the New Deal and present was science fiction author HG Wells who had penned the dystopian speculative fiction novel, The Shape of Things To Come six years previously. By his side, Albert Einstein who had fled Germany in 1933 was - haunted by the evolving horror in Europe and wrestling with the moral consequences of bringing into the realm of the possible the world’s first atomic bomb. Einstein in particular was heavily involved in the fair, giving speeches, opening pavilions and visiting the site regularly. But the gradual closing of the European pavilions, the obvious contradictory nature of the fair’s utopian idealism and the escalating horrors abroad were taking their toll. When asked to provide a message to be included in the Westinghouse Time Capsule, he wrote: “Anyone who thinks about the future must live in fear and terror” (Mauro, 2011). It was within the grounds of Flushing Meadows, New York that the seeds for the dark euphoric moment were indeed first sown.

The iconography of the fair was a techno-cultural construction and echoed familiar Futurist tropes and adapted them for a particular brand of American progress. Man’s dominance over the human form and its obsession with verticality and human flight were evident in the design of the central icons of the fair, the Trylon and Perisphere, and the extensive advertising ephemera (see Figure 68A) which emphasised these structures in much the same way as the Eiffel Tower had been

28 His opening speech at the Palestine Pavilion was delivered against the backdrop of the unfolding horrors in Europe and the ongoing tensions between the British and the Palestinian Jews, he spoke in anger when he read: “The World’s Fair is in a way a reflection of mankind. But it projects the world of men like a wishful dream. Only the creative forces are on show, none of the sinister and destructive ones which today more than ever jeopardize the happiness, the very existence of civilized harmony” (Mauro, 2011).
aestheticized by the Futurists decades earlier. Internally the exhibit halls were designed along sleek modernist lines, featuring multimedia elements such as projections, lighting and sound and were designed to be viewed from above (see Figure 68D & E). This perspective was chosen to simulate the view from an aeroplane – a new startling technology most Americans had yet to experience in the post-Depression era and a perspective from which they certainly would not have seen the American landscape. By implementing such tactics, the fair’s industrial designers “synthesised the three major forms of the technological sublime: the dynamic, the geometric, and the electric” (Nye, 1994, p. 203). As Dan Howland notes in Wired magazine, “You have to understand that the audience had never even considered a future like this. There wasn’t an interstate freeway system in 1939. Not many people owned a car. They staggered out of the fair like a cargo cult and built an imperfect version of this incredible vision.” (Baker, 2007) A uniformity of urban planning reminiscent of Le Corbusier’s Plan Voisin, Paris from 1925 was evidently in mind of the designers of the Futurama: The Magic City of Progress and Democracity dioramas in which large ordered structures, wide gently curved freeways and gleaming towers emerge from the greenbelts of the rolling landscape to serve the citizens of the future.29 Author Robert Bennett has noted that these displays, while ingeniously constructed echo an

... ecumenical range of European and American modernist precedents, including the decentralised, open spaces of Ebenezer Howard’s Garden City and Frank Lloyd Wright’s Broadacre City; the towering skyscrapers depicted in Hugh Ferris’s architectural renderings in the Metropolis of Tomorrow (Ferriss, 1986); and the cinematic science fiction fantasies of Fritz Lang’s Metropolis (Lang, 1927) or David Butler’s Just Imagine (Butler, 1930), a comedic, musical revision of Lang’s dystopian film (R. Bennett, 2010, p. 183).

This link with science fiction was explicit, it was the lusty allure that permitted the audience to see beyond the rational interpretation of the extravagant image constructions before them and instead, unencumbered by the toil of the recent past and the reality of the darkened hour that was almost upon them, and gaze deeply into the glittering diamond of the America of the future. The 1939 iteration of the World’s Fair was a coordinated endeavour between corporate America and the governments of the day. This was a distinct departure from previous fairs in which cultural groups, national emissaries and industry lobbyists were central to the politics and coordination of how fairs...
would look, where pavilions were placed and what they were permitted to exhibit. Instead the project was spearheaded by industrial designers and engineers who were charged with the task of producing a cohesive and persuasive “transcendence”. And this would not be demonstration, education was seen as a distraction, an irrelevance, this was about magic, fantasy and facade. Rather than seeing the engine of a motor vehicle - the pistons, the switching gears, the spark of ignition, the grease and oil - one was given the fantasy of automation, the ubiquity of machine “intelligence”, the slick lines, the shiny duco and the futurist interior panelling. The World’s Fair of 1939 “represented a moment where corporations could deploy the images and themes of science fiction as well as utopian and futurist design as vehicles for promoting a particular model of consumerism which would profoundly shape the post-war era” (Jenkins, 2011). By ignoring the divisions between traditional themes which had been the norm for previous fairs – agriculture, manufacturing, science and art – the designers of the 1939 fair instead melded science and art into a techno-cultural blend of persuasion and propaganda.

At the core of this planning were a group of industrial designers lead by Henry Dreyfuss and Norman Bel Geddes who were charged with the design and production of the dioramas and models for the fair’s centrepiece attractions, *Futurama* (Bel Geddes) and *Democracity* (Dreyfuss). In their hands, along with a core group of designers and engineers, what emerged was a stage-managed fantasy built from a futurist hybrid of an Art Deco past and the modernist streamlined aesthetic of the period. With backgrounds in theatrical stage design, advertising and engineering in essence what they produced was a sophisticated and carefully crafted techno-cultural text:

Synthesising these various fields, industrial design gave equal emphasis to product performance, dramatic presentation, and consumer appeal. Employed by both the fair’s organisers and its corporate exhibitors, industrial designers created the startling synthesis of theatre, futuristic design, and technology that became the world’s most popular exhibits. The fair would demonstrate the beneficence of corporate control, from invention through mass production to merchandising, through aesthetically pleasing designs calculated to overwhelm the visitor. (Nye, 1994, p. 210).

Central to this message were the films, *To New Horizons* produced by General Motors (John Handy, 1940), *The Middleton Family at the New York World’s Fair* produced by Westinghouse Electrical (Snody, 1939), *The City* produced for the American Institute of Planners (Steiner & Van Dyke, 1939), *Leave It to Rollo-Oh* produced for Chevrolet (Jam Handy, 1939), *Pete-Roleum and His Cousins* a full-colour stop motion film produced for the Petroleum Industries Exhibition (Losey, 1939), and the first stop motion 3D film, *In Tune with Tomorrow* produced for the Chrysler Corporation (Norling, 1939).
These were corporate funded promotional films that supplemented and reinforced the ideologies embedded in the elaborate exhibition halls. These films were the bridge between the conceit of the design and the take-home message of the corporate machine whose explicit agenda was the articulation of the futurist narrative to a burgeoning society of American consumers. While the World’s Fairs of the early nineteenth century were based largely on monolithic nationalistic structures, the mechanics of primary industry, and the cultural toil of the fine arts, the 1939 iteration broke utterly with the past and focused on the presentation of the future as a simulation and deconstructed the very complex - and very real - advancements in technology via stage props, set design and visual metaphor. As Stephen Heller observes in his text *Design literacy*: “It was a masterpiece of showmanship, the epitome of stagecraft – real-life Land of Oz indelibly etched in the memories of those who attended and in the imaginations of those who did not. It was more than a collection of exhibits; it was a wellspring of innovation in corporate identity and promotion” (Heller, 2004, p. 356).

One particular film by car manufacturer Chevrolet, *Leave It to Roll-oh* (Jam Handy, 1939), is an archetype of the form featuring miniaturised robots to illustrate the seemingly ‘magical’ process of domestic appliances and the mechanical operations of a motor car. The key visual metaphors employed in this instance, the “tiny robots”, are deployed in a domestic scenario involving an unsuspecting housewife surrounded by the “thinking” technology embedded into her environment designed by the corporation to enhance her productivity and happiness. This is a clever futurist concoction designed to explain away complexity with simplistic scenarios and robotic avatars. Like Kahn’s illustration, mechanical analogies and machine thinking are used to illustrate invisible processes, however in this instance, with an added layer of “intelligence”. After the first sequence, in which a maintenance man belittles the young housewife for failing to grasp the meaning of the script’s concocted techno-babble, we are introduced to her offsider,
Roll-Oh the robot. Roll-Oh is an awkward sci-fi creation, although he seems infinitely more capable than the plodding Electro as he helps the hapless housewife fulfil her domestic duties – receiving unsolicited roses from the postman, helping to set the dinner table, lighting candles and opening cans of food. Sci-fi futurist dreaming to be sure, however Roll-Oh quickly fades from view and we are then presented with the real magic of our technological present – invisible “robots” and “tiny brains”. The narrator’s condescending tone of voice shifts to a more earnest and enthralled delivery as he describes the “the amazing machines and gadgets that almost seem to think for themselves”. As the housewife prepares a meal on the stove the narrator extols the appliances’ virtues: “the tiny clockwork brains and heat regulators on our kitchen stoves apparently do almost everything except read the cookbook.” A toaster is referred to as a “thinking machine” that keeps “golden brown slices of toast from turning into slabs of charcoal”. The scene shifts to the workplace where we see a worker loading a printing press to which the narrator enthuses, “no robot machine has ever been accused of being careless or absent minded at work. Here a robot that never sleeps nor winks or looks out the window stands guard over the men who work at this giant press.” This manner of description continues across a sequence of work sites, office buildings and school scenarios in which the “thinking machines” watch over us for our protection, and it would seem, our efficiency. However the most telling moment in the promotional film is the deconstruction of the “tiny robots” busy at work deep inside the engine of the Chevrolet, the film’s producer:

Don’t look now, but this motor car is simply full of robots! ... One little robot, a very small but intelligent brain, sits up the back of the engine in the voltage regulator and keeps close tabs on the generator to see that the generator keeps up enough current to keep the battery fully charged - but not too full! And still another deep thinker rides way up in front; its job is to keep water from cooling off in the radiator until the engine has warmed up to a good working temperature ... driving wouldn’t be half so much fun if we didn’t have that phantom crew of intelligent robots to help us. Every day in our homes and offices as well as in our motor cars, hundreds of these little robots are doing more things for us than we realise, taking care of the routine tasks and leaving us free to live and work and play in greater ease and comfort and safety!” (Jam Handy, 1939).

This last phrase defines the context of future labour, an economic safe zone in which participation provides the wealth to purchase the future lifestyle that the depression years had rendered unimaginable. In many ways this is a pre-emption of the mid-century analogy of the human brain as computer while in the same instance it is a fictitious glorification of the technologies of the early Modernist period so celebrated by the Futurists.³⁰ Here the true wonder and excitement

³⁰ In the printed transcriptions of J.Z. Young’s 1950 Reith Lectures, Doubt and Uncertainty In Science, Young makes the direct comparison between the human brain as a system of processing signals in much the same
of technology, of physics and of engineering is sacrificed in order to promote a product and amaze an audience with futuristic symbolism. Caught between the visible and the invisible, the past and the future, the illustrations of Kahn and Google’s *Chrome Speed Test* also represent retrospective articulations of technology with a strong Futurist bent. For Kahn the imagery is evocative of an earlier period of machine operation – buckets, pulleys, pipes, tubes and overly elaborate engines – that simulate the mechanisation of the human organ. While Google employ a shotgun – surely a primitive technology – a large loud speaker cone, an old leather boot and the dramatic use of an electrical current to symbolise computational speed and machine intelligence. Each example is a fitting counterpart to the quest for miniaturisation and invisibility peddled by the industrial designers and marketing teams of the 1939 World’s Fair.

Taken together these approaches to selling the future and the marketing of a machine aesthetic are illustrative of a wider techno-cultural narrative that relies on the use of exaggerated visual forms, performative showmanship and sloganeering and the inventive use of high-end visual effects to represent the processes of mostly invisible yet increasingly more complex digital technologies. Sometimes this is retroactive as in the case of the *Google Chrome* video aesthetic but mostly it is the surface of the diamond that we are shown first in a deliberate effort to obscure the machinations of the technology in favour of the aesthetic pleasure of the futurist buy-in. We trust that it works. We believe that the technology is performing “miracles”. This notion of trust and technological suprematism is inherent in the corporate identity constructs of Chevrolet, Microsoft, the Honda Corporation and Google but it is also true of a range of contemporary electronic manufacturers and telecommunication service providers who employ similarly sophisticated techniques which imitate contemporary science fiction tropes to market the future as a lifestyle. The obvious message here is that it is not necessary for the consumer to really understand the technology within the object but to be emboldened by what the external fantasy promises: the way that the ‘modern’ computer processes information: “All animals that show good learning powers have large numbers of short nerve-cells in their brain. We do not know what the system employed for storage may be, but it seems to depend on the presence of great numbers of cells. The latest mechanical calculator in America has 23 000 valves. But the cortex of the human brain has nearly 15 000 000 000 cells. A computer with so many parts is beyond the dreams of the engineer. A huge building would be needed to house so many valves and all the water of Niagara would not be enough to work and cool them. Yet all that such a machine can do, and much more, goes on gently, gently in every human head, using very little energy and generating hardly any heat”. (Young, 1950)

Obviously the eventual advent of the transistor and the discovery of silicon as a conducting property aided in the dramatic militarisation of the computer and the consequent gains in speed and processing power without excessive loads of heat. Such conditions have brought the modern microchip into ubiquitous use on a comparative scale to the imaginative propositions of Young and Kahn in which technology is embedded into fabric, skin and disposable everyday objects – the collective computerisation of the modern world – and combinations of systems (AV receivers, magnetic storage, CPUs, WiFi transmitters, IO devices) which mimic the social and problem solving mechanics of the human body.
software without the clutter of the code, the branding of the future without the anxieties of the past and especially the trauma of the present.

My new media work *Primary Propaganda* was a direct response to this trend utilizing similar touchstones of colour symbolism, organic movement, liquid energy and urban space. The piece was a video installation comprised four 1080P video sequences of crowd movements in two of Tokyo’s busiest public spaces – the Tokyo airport subway station and the Shibuya pedestrian crossing. These sequences are intercut with the imagery of four different coloured balloons moving right to left across the screens. The fragile primary objects move with the gentle motion of the waves lapping upon the shore. From one screen to the next the balloons change colour sequentially – yellow, red, green and blue – intercutting the Tokyo imagery. For the RGB signal is in our DNA. Red, green and blue drift gently through the Cyber City populace. The addition of the yellow fits out the primary colour spectrum and together they are symbolic of a century of techno-futurist manifestos. The movement of the crowds and the movement of the waves are in gentle symmetry, the balloons representative of the essential colour properties of the most simple image constructions as they tilt and tip and sway across the surface. The same primary colours which are exalted in the tech advertising of Samsung and Sony, the same essential colour properties represented in the logos of Microsoft windows operating software and Google’s Chrome web browser, the same iconography

![A sequential series of screenshots from each of the 4 channels from the installation Primary Propaganda (Goodwin, 2011e).](image)

![A sequential series of screenshots from each of the 4 channels from the installation Primary Propaganda (Goodwin, 2011e).](image)
the Futurists used in their chromatic colour experimentations a century earlier. A one hundred year symbiosis of technological image making.

Produced in the wake of the Japanese tsunami of March 2011, the imagery from Shibuya Crossing and the Tokyo airport subway juxtaposed with the imagery of the balloons lilting towards the camera on a gentle wave has particular significance. For me the inclusion was also an attempt to capture the vulnerability and melancholia of a personal moment – a Gold Coast afternoon shared with a close friend sitting on a wide open beach – a six pack of beer, some cigarettes, more silence than words – as he contemplated a future without his parents – one recently deceased, another terminally ill; an awful book-end to an awful year. We watched in silence as a red balloon, most likely escaped from a livelier occasion some hundreds of meters, perhaps kilometres south entered the frame of our vision, buffeted by an on-shore breeze hugging the lip of the waves, skipping between the shadows of the high rise towers and then up the beach and away. A profound moment shared but never acknowledged.
While some of the core themes of the piece are influenced by personal and historical experience, the ambition of *Primary Propaganda* is to signify an aesthetic tone that is derived from the advertising strategies for technology devices and services. The key reference here is the series of Sony Bravia commercials produced between 2005 and 2007. The first film in the series, the iconic ‘*Bouncy Balls*’ advert featuring a multitude of rubber balls bouncing down a street in San Francisco is the most obvious compositional touchstone here. This was a motif they would repeat with the ‘*Paint*’ advert in 2006, ‘*Pyramid*’ in 2007 and later that year, ‘*Play Doh Rabbits*’, a stop motion film in which 189 2ft play doh rabbits hop through New York city to the tune of *She’s a Rainbow* by the Rolling Stones, the couplet, “She shoots her colours all around. Like a sunset going down” is most telling in this context (Jagger & Richards, 1967). The Play Doh Rabbits ad features a large wall of Play Doh water marauding through the city square eventually giving rise to a gigantic rabbit from under which spills a sea of primary coloured cube-like objects which progressively morph into a carpet of rainbow coloured pixels for the commercial’s aerial finale (see Figure 71). This a stunning confluence of the destructive forces of nature, in this case a tsunami, pixels like building blocks of screen fidelity and a giant kitsch rabbit so emblematic of kawaii quality in Japanese culture. Of course, this suite of Sony commercials is designed specifically to signify colour fidelity and image clarity of their Bravia line of televisions – trying to make the invisible visible. So rather than showing the device itself they employ abstract objects, skilfully getting around the fact that the majority of people watching the commercial will be doing so on a television screen with inferior image reproduction to the device they are promoting.

The aim of my piece *Primary Propaganda* however, was to employ a much more subtle and contemplative technique. Like that afternoon on the beach. Like the quite hours before and after the Japanese tsunami of March 2011. There is something very neo-gothic at work here, events take place in full view, in daylight and by banks of neon, yet beneath the surface there is anxiety and apprehension, for the past and the imminent future. In stark contrast to the frenetic movement and electricity of one of the most densely populated cities in the world, the waves lap – rather than crash – against the shore. While the coloured balloons – themselves awkward symbols of both the great accident of the earth’s shifting crust and the promise of the technological sublime – flow gently towards the shoreline. These gentle, soft and fragile objects return to the shelter of land’s end like a life boat, a fallen capsule, a damaged vessel. The placement of the screens in sequence is designed

---

31 Kawaii in Japanese means “cute” or “lovable”. Evidence of this can be found in the Pokémon animated series and game universe, the use of rabbit iconography in the Akihabara district (Electric Town) in Tokyo and the Narita prefecture’s council road works which use plastic pink rabbits for their safety barriers.
to give a sense of the separation between the urban locations so that the balloons would be appear to be passing through each environment, as if moving from one scene to the next.  

The lilting movement of the balloons in *Primary Propaganda*, and the overall contemplative, melancholic tone of the piece is also heavily influenced by the plastic bag sequence from Sam Mendez’ *American Beauty* (Mendes, 2000). The plastic bag, although empty and nondescript, ushers in a transferral of the dreams and aspirations of the two young viewers. Yet this shape shifting seemingly innocuous object dancing amidst the swirling winter leaves also signifies the futility of their journey and the inevitably of the horrific fate which lies ahead. The anxiety and awkwardness of youth hangs perilously in the air. The discarded white plastic shopping bag, “the most beautiful thing I have ever seen”, is also the most perfect articulation of the past-present-future endlessness - suburban middle class hegemony floating inside a television screen. This is modern western cinema’s truly gothic high-tech moment, when the raw screen fidelity of digital video meets the concrete and the plastic and the winter leaves. While Thomas Newman’s brittle piano score – which can be considered as a companion piece to his follow-up theme for the equally dark TV series *Six Feet Under* – haunts this slow deliberate unravelling of the American Dream.

---

32 An alternative edit of the composition was also designed in which each video sequence are reduced to 480x320 and placed side by side but within the parameters of a single 1080P video frame similar to Chris Cunningham’s work for Gil Scott-Heron’s, *New York Is Killing Me*. 

---

Figure 73 Multi-screen assemblage of *New York Is Killing Me (Chris Cunningham Remix)* (Cunningham, 2010)

Figure 74 The plastic bag sequence from *American Beauty* (Mendes, 2000)
In symbolic terms we first encountered the notion of the light on dark aesthetic early in this chapter. And the notion of the invisible made visible in the branding of the information economy is a metaphor which will crop up repeatedly in this discussion, especially as I explore the wares of marketers, directors and artists who seek to reveal the machinations of the techno-futurist obsession. The appropriation of meaning and the simplification of language, the hypnotic animation of shape and symbol, the distortion of time via the manipulation of the photographic image and the persistent use of electricity as metaphor – are all tricks to sell the machine-like fantasy people are increasingly adopting as a cloak against the trauma of the real. So much so that one could be tempted into thinking that the omnipresent darkness – the canvas upon which all video and digital media is first cast – was never there at all. And like the World’s Fair of 1939, the parade of light and colour is a powerful distraction against even the most foreboding of realities.

I will reveal in the coming chapter how a broad range of production techniques, visual design methodologies and motion graphic tools are employed by designers to create electrical simulations. The mediums of advertising and broader visual culture frame this technological ruse through the windows of the television, the cinema screen, the web browser and the mobile device, themselves ritualising our relationship via repetition and physical engagement with the interface. This is a simulated engagement. An experience that might be digital but demands the mechanics of physics, it preaches touch but it is not necessarily felt, it glows but it does not necessarily shine. Software publishers and device manufacturers know this; they are the inheritors of a century of technological integration. They know our relationship with a machine vision of the world has been evolving steadily, that the darkness is to be avoided, the anxiety marginalised to the fringes where the neon ceases to exist. And as Balla and Depero wrote in the Futurist Reconstruction of the Universe in 1915:

(we) seek to realise this total fusion in order to reconstruct the universe by making it more joyful, in other words by an integral re-creation. We will give skeleton and flesh to the invisible, the impalpable, the imponderable and the imperceptible. We will find abstract equivalents for all the forms and elements of the universe, and then we will combine them according to the caprice of our inspiration, to shape plastic complexes which we will set in motion (Balla & Depero, 1915, p. 197).

And so “glittering diamonds” become a fluid plastic construct, the present reorganised as a most fantastic future narrative. The complexities of our times become imponderable; meaning beyond the image frame is obscured. In this reorganised space the first threads of the gothic high-tech conceit of the present-future space begin to appear.
In the following chapter I will demonstrate a more complex expression of these themes through the advertising collateral of DHL, Samsung, IBM and Comcast. I will also reveal the most elaborate expression of electrification as simulation, the liquid blue electric with deep analysis of Tron and A.I. Artificial Intelligence. These digital objects represent the site at which the anxiety of the neo-gothic experience begins to run alongside the futurist fictions of millennial technoculture. In this space the previously inanimate blackness of the canvas begins to express itself as the atmosphere of the dark euphoric fall.

Figure 75 Two frames from the informational video Google Chrome Privacy - Browsers, Privacy and You (Google Inc, 2010)

Figure 76 Screenshot of Google 404 Error page, captured on the 12th March 2014 (Google Inc., 2014)
Figure 77 Artist Wang Yuyang poses with his installation Artifical Moon (Yuyang, 2011)
The Impressionists, whom I have called scientific temperaments, were the real initiators of the break with the past. After their arrival a new light coloured the world. They recreated it and laboured throughout their existence to discover new elements that our epoch has made its own, because on these, as on new foundations, would rise the luminous edifice of the future Aesthetic.

- Umberto Boccioni, *Futurist Painting* lecture given at the Circolo Artistico, Rome, May 29, 1911 (Boccioni, 1911b, p. 232)

In the landscape of the Cyber City the iUser is connected to the network, tethered to the unseen data cloud and in touch with the experience of technology and information exchange through the corporatized visualisation of the contemporary digital aesthetic. Here, the representation of the unseen, or the soul of experience as the Futurists would have it, becomes a vivid – if somewhat abstract – visual metaphor in which the technologies that construct the colourful chromatic energy of technoculture are now components and applications within the very devices and services which the end user is being sold. The visual metaphor is a diversion designed to earn trust through distraction and spectacle and to cajole the consumer into buying into this particular variant of the machine ambience. This of course is Advertising 101, as General Electric surmised in the 1920s with their analysis of electric advertising signage and the allure of its illuminated aesthetic: “The attracting power of brightness is instinctive – its appeal to the senses is the most elementary sort ... automatic motion is an exhaustive characteristic of electrical advertising and its appeal is also dependent upon instinctive feelings. The use of colour is one of the most powerful means of creating an atmosphere – an inner feeling – a pleasant association and these are among the chief functions of displaying advertising” (General Electric Company, 1925).

The use of electrification to advertise a product or illuminate a business or represent the “essence” of a product’s process have long been employed by manufacturer’s and marketeers since the introduction of street lighting and electric signage at the turn of the century. Yet the representation of technology in contemporary culture through advertising is problematic, much of new media technology and the business of information retrieval and exchange is an often invisible
ethereal practice. Wireless communications, access points, data quotas, network speeds, search algorithms, image and audio compression are largely conceptual ‘back end’ technologies which are neither visible nor explicitly understood by the end user. To promote or eulogise such technologies, advertising agencies and their manufacturing clients represent technology in a manner that is akin not only to the Futurist artists of the early 20th century or the complex constructions of the 1930s World Fairs but also the very first marketing strategists who employed electrical signage in advertising. While the Futurist’s compositional techniques employed to represent the soul and psychological state of the individual and to evoke the dynamism of electricity and mechanised technology through paint on canvas, the contemporary media designer is now using technology and electricity to promote and sell a similar agenda. Hyper-charged via the high contrast primary colour compositions of TV and web advertising, specifically brand and product promotion, these companies are conjuring a new universe, recasting the dynamics of speed, verticality, electricity, and sound in a similarly provocative cloak of technological utopianism. Woven together these elements conjure a powerful narrative of a compelling existential technological reality – one that is alive, cognisant and embedded. As Balla and Depero noted in the *Futurist Reconstruction of the Universe*, to achieve such a mandate the Futurist architect, “... relies on plastic dynamism to provide a dynamic, simultaneous, plastic and noisy expression of universal vibration” (Balla & Depero, 1915, p. 197).

But where Microsoft and Google’s image making is reserved mostly to corporate identity collateral rather than technological application, corporations such as Sony, IBM, BSkyB, DHL, Samsung, Mazda and Comcast are among a group of publishers, manufacturers and service providers who actively seek to attract consumers to their wares via the metaphorical representation of broader technological visions and the Futurist possibilities of their application. Indeed, the use of visual metaphor and the amalgamation of language into easily deployed catch phrases and slogans – even singular symbolic motifs such as “i” and “X” – are essentially about the recasting of the glowing orb into the chromatic ‘vibration’ of the techno-cultural narrative. This re-ordering of the universe according to the supposed technological suprematism inherent in these products and services is not only an appropriation of the Futurist oeuvre but also a gleaning of distinctly contemporary notions as well. Familiar ideological buzz words populate this progressive futuristic space, such as sustainability, virtuality, information ecology, augmentation, regeneration, globalisation, surveillance, networked data, and artificial intelligence. This language is supplemented by the use of metaphor and symbolism in a manner reminiscent of the “tiny robots” from WC Handy’s *Leave It To Roll-Oh* film who were portrayed as the instigators of all of the sophistication and intelligence hidden within a 1940s era Chevrolet. But now there really is something lurking within, in this period of rapidly evolving computational power and miniaturisation, there are a plethora of “tiny brains”
humming away at our behest. The distinction here is that the engineering and the manufacturing of technological change in the early Futurist period was identifiable, solid, robust – trains, steam liners, aeroplanes and cars – highly visible industrial and mechanical icons of early modernity. The current technological shift – the information flow – is operating on an entirely different premise.

Its changes are – paradoxically – less visible, less controllable and more molecularly pervasive than in previous periods of technological change. The Iron Age, The Agrarian Revolution, the first and second Industrial Revolutions all delivered us new tools that could be grasped by most... One could understand the workings of new inventions – the gramophone, the record, the light bulb, the car engine, the radio. You could see them, pull them apart, and put them back together again. Inventions came more slowly and were not immediately global or viral (Christoff, 2013).

The complex notion of “liquid modernity” is posited by Zygmunt Bauman: “The liquidizing powers have moved from the ‘system’ to ‘society’, from ‘politics’ to ‘life-policies’ or have descended from the ‘macro’ to the ‘micro’ of social cohabitation” (Bauman, 2000, p. 7). In this space, in the Cyber City, the ingredients of the techno-cultural narrative liquefy – as dispersed by the new media authors and their marketers – accumulating in the seductive guise of the digital object. The authors of the techno-cultural narrative make busy with the gloss and the sparkle of Hollywood to explain away the complexity of this technological shift instead replacing the mechanics and science of their creation with a gaudy high-definition stream of media content. The flow becomes electric. Information and meaning just a diversion. The seeds of Sterling’s gothic high-tech bubbling to the surface.

In the Cyber City this electricity is kinetic. Steel and flesh and gorilla glass are tangible physical surfaces of interconnectedness bridged only by the fluid dynamics of motion graphics. This mode of experience advertising relies on movement, frame rates and motion control, the dynamism of its properties transition across the colour spectrum as waves, currents, loops and spikes. It is the
liquid electric ambition of the Futurist narrative authored for the screen and deployed right into the palm of your hand. This kinetic fluid visual construct is the stylisation of a “near future” reality. In this hard to define space the benefits of technological progress operates in the interface between science and fiction: media designers become the new magicians conjuring clarity through screen resolution and colour depth, promising an “immersive experience” to promote imagination and dreaming; connectivity and contextual augmentation via wireless technology and pre-emptive service delivery; convenience and comfort through interface design and ergonomics; information delivered with speed, compression and specificity; and above all, a future that is clean, pure, sustainable, and within reach - almost. Almost because this future is a fiction, almost because high-tech promise is a promise that cannot actually be “experienced”, almost because the future is always invariably only ever just out of reach. These are distinctly marketing constructs of the technocultural narrative in the new millennium. They blend the basic elements of the Futurist technique with the hybrid landscape of the information society. Even in a literal structural sense, there are many instances in which the approach is a direct extension of the chromatic colour experiments of the Futurists. In the case of the Comcast in the United States, BSkyB in the United Kingdom and Samsung online (see Figure 79) their marketing collateral directly references the act of mixing paint in liquid form to represent the technological advancements in colour fidelity and screen resolution.
The lead online web video for Samsung’s most recent entry into the Smartphone market, the Galaxy S4, uses an abundance of primary colour imagery including buckets of paint, a bunch of balloons and a set of coloured pencils to denote the “unimaginable clarity” and “immersive experience” of their new device. The opening gambit of the promo clip claims that the Galaxy S4 is “creating a richer, simpler and fuller life” for the user.\footnote{The web only video, was the second most popular commercial advertorial on YouTube in the month of March 2013 and at the time of writing had been viewed over 12 million times. (Google Inc., 2013)} The device’s primary tag line - which appears alongside all of its advertising collateral - is the descriptor: “Life Companion”. This is probably the biggest conceit of a campaign which promises that “life becomes more fun” with a Galaxy S4, that the device will make “daily life more convenient”, “relationships” will “grow closer”, and most importantly, your “wellbeing is cared for” (Cheil, 2013a). BSkyB, which provides cable and satellite subscription television and internet services in the United Kingdom, picked up the paint-as-metaphor technique for their 2010 promotional video for their new set top box, Sky+HD (see top image \textit{Figure 79}). The advert featured an assembly line of robots injecting the Sky+HD cable TV box with tubes of colour from gigantic paint filled vats, while engineers regaled in NASA-style outfits (or are they “colour scientists”?) lurked nearby with requisite clipboards and hard hats. The LED information screen on the Sky+HD Box blinks “Super Colour”; the advertisement’s tag line? “Believe In Better” (WCRS, 2010). The advert is sound tracked with
Gene Wilder’s beguiling take on *Pure Imagination* from the original *Charlie & the Chocolate Factory* film (M. Stuart, 1971). The lyrics perfectly articulate the consumer electronic industry’s fantasy idealism: “There is no life I know / To compare with pure imagination / Living there you'll be free / If you truly wish to be” (Bricusse & Newley, 1971).

In a strange act of retro-fitted futurist logic, Sony followed their famous ‘*Bouncing Balls’* commercial of 2005 with a sequence of exploding paint bombs in a disused tenement block in Glasgow Scotland (see Figures 79 & 80). Here the colour is vertical, violent and exploding; the primary colour spectrum detonating up the face of a 30 storey building is akin to a vibrant act of colour demolition. Internally placed cameras transmit sequences of paint exploding towards the camera - crashing through kitchen windows, torrents cascading down graffiti scrawled stair wells and blood red fountains of paint exploding up from beneath the earth below a children’s playground like an outtake from *The Shining* (see Figure 81). Each of these videos is emblematic of an ongoing trend in the use of colour symbolism via paint, liquid and electricity to promote an experience of technology. From the iconography of the company branding of software publishers such as Microsoft and Apple through to device manufacturers such as Samsung and Sony to service providers such as BSkyB and Comcast, media designers are using a bright, loud, primary coloured aesthetic to communicate high technology concepts to move the advertiser’s products.

Elsewhere corporations and the advertising agencies they employ have taken Futurist symbolism a step further by utilizing cinematic production techniques to animate the *soul* and the *wisdom* of the machine via the fluid kinetic movement of digitally animated electricity. Sometimes this is used as a framing device, to symbolise power, technological achievement and dynamic functionality, and sometimes it has a more commercial conceit of making an inanimate device appear alive. This is evident in the series of clips for a range of mobile phones released by HTC in late 2011. For the HTC Titan, bristling blue prickly static collides on the screen to form the body of the mobile phone as if the phone itself has emerged from
this electrical maelstrom, a visual motif which is repeated throughout commercial when a function or process is in need of an energetic highlight (see Figure 83). A similar approach is used for the HTC Radar, in which purple liquid energy is seen to be zapping and zipping across the screen, with an electric charge sizzling within the device’s midst, the purple liquid electric clouds birthing the body of a HTC phone from its interstellar cosmos (see Figure 84). Such techniques are relatively common in television advertising and brand packaging and can be seen across a range of promotional materials for a variety of industries, especially in an era when the software packages used to develop such fluid, flame and smoke effects are no longer the exclusive preserve of high-end Hollywood effects houses. The creative application of these motion effects as metaphor however, rather than simply a glossy diversion, is a far more sophisticated operation. Contemporary advertising agencies have mastered the behaviour of this precious liquid energy and their corporate clients the language of the techno-cultural narrative and by doing so they have channelled their own creation myth. The recurring motif is of a primordial gas, sometimes a celestial object, but most commonly a coalescing of liquid and kinetic electricity which emerge from the dark veil of soupy black nothingness to give life, to mimic intelligence and foster a futuristic idealism in their ecosystem of products and their users. The message is simple: from nothing, from darkness, comes light.

DHL is a global courier service, they call themselves the “Logistics Company of the World”. They deal in the speedy passage of physical objects and rely on accurate data collection and data sharing to facilitate that task. They are in many ways a truly modernist construct with a very real and tangible service. Yet DHL also inhabit a space which fuses notions of global systems, technological innovation and the dynamics of high speed transportation with more social aspects of information exchange. Their stated “purpose” for instance, which is outlined in their corporate mission statement, is to deliver “joy”, “prosperity” and “trust” (Deutsche Post DHL, 2013), a very liquid manoeuvre from the complexity of the system to affective sentiments of cohabitation. For the last few years DHL’s global brand has been using a glittering yellow comet like streak of electricity to articulate this bridge between the system and the individual by animating the “logistics” of speed, machinery, people and information. Their ‘Power of Yellow’ campaign and their strategic corporate profiles on their YouTube channel (see Figure 85A - C) utilise the gamut of Futurist imagery including object orientated illumination, incandescently lit cityscapes and images of extreme speed and modernity – planes, Formula One racing cars, bullet trains – all of them out run by “the power of yellow”. Even the Futurist obsession with verticality is reflected in very obvious appearances by the tallest building in the world, the Burj Khalifa in Dubai, the Tokyo Communications Tower in Japan, the UN Building in New York City and the ultimate Futurist icon, the Eiffel Tower, as the yellow bolt of electricity zips across continents at hypersonic speeds. But this application is not restricted to the
Figure 85 Advertising featuring liquid and kinetic electricity A–C) DHL “The International Specialists” TV Commercial, (180 Amsterdam, 2011) D) DHL The World in 2050 corporate video (Deutsche Post DHL, 2012) E) IBM commercial, Data Anthem F & G) IBM commercial, Data Energy; H) IBM commercial, Data Baby (Ogilvy & Mather, 2010)
mere wonders of transportation and logistics, DHL is also in the future business, their corporate video, *The World In 2050 – A Future Study*, presented by the company’s CEO Frank Appel veers greatly from the concept of logistics and transportation and discusses what he calls, “Customised Lifestyles” placing the idea of society and the individual at the core of its mantra: In “2050 our world is much more colourful, diverse and local. Technical progress, especially in 3D printing turns consumers into producers. Self-made and individually tailored becomes the new ethos for society” (Deutsche Post DHL, 2012).

IBM observes a very similar methodology in their 2011 series of commercials which mix visual metaphors with social applications for complex systems and services in the almost here, the very near and the distant future. ‘Data Anthem’ was the signature commercial of a campaign that featured a lead in graphic resembling a sub atomic act of nuclear fission supposedly to denote the origins of data and its myriad of complex applications (see Figure 85E). In a whole suite of corporate videos on their Vimeo channel, IBM employs to dazzling effect, the liquid electric metaphor. Swirling streams of kinetic blue and red radiating light dance along power lines, the full spectrum of the rainbow swirls between wind turbines on sprawling coastlines, shimmering iridescent ripples rise from a new born baby’s chest, while ribbons, arrows and cellular shapes move in the virtual x and y axis of distant server farms (see Figure 85F & G). The heavy measured male narration in each instance begins, “This is data,” as we regard yet another simulation of the invisible machinations of information flows – big sexy graphics for big databases of personal information, the currency of the new economy. In each instance the colours are rich, the movement is fluid and the archetype is electricity. Each video segment concludes with an equally measured plea to the viewer: “Let’s build a smarter planet” (Ogilvy & Mather, 2010). American internet service provider Comcast ran a series of commercials in 2007 for the introduction of its new “High Speed Data with Power Boost” service. Speed is obviously the core attribute on offer yet they chose a liquid substance and a primary colour palette to articulate the concept. In one commercial typical of the series, ‘Pagoda’, set in the “Comcastic abs”, a young scientist presents to his superiors a syringe full of a mysterious substance. The syringe appears to contain iridescent strips of primary colours, (a marketing necessity perhaps as they also feature in the Comcast logo of this period). A man standing behind a large table is given half a dozen decks of playing cards, the syringe is then squeezed into his hand and a shimmering liquid metal – similar to mercury – oozes forth (see Figure 86). The man gleefully rubs his hands together and proceeds to construct an elaborate palace of cards in a matter of seconds. The young scientists is delighted, “It’s a Pagoda!” he declares triumphantly. His boss, clearly impressed, turns to him and asks, “Have you got more?” After a beat and the requisite raised

---

34 3D printing is an odd example of Futurism for DHL to cite. If this indeed is the future of 3D printing as envisioned by DHL (see Figure 85D) it would no doubt spell the end for DHL if it were ever to come to pass.
eyebrow we cut to a set of sliding doors opening into a vast warehouse - in a similar manner to the aforementioned BSkyB commercial (or is it Raiders of the Lost Ark?) - to reveal rows and rows of huge vats of the primary coloured ingredients (see Figure 86). These icons of the chromatic colour experiments of Delaunay and Boccioni appear here again, this time as the base properties of a mysteriously transformative liquid called “PowerBoost” or as it is described in another video in the series, “Comastic High Speed Juice”, which produces unimaginable speed and power (Goodby Silverstein and Partners, 2007b). This campaign was followed in 2009 by a web based series of commercials and a now defunct website35 called Comcast Town in which a user could create their very own virtual world resplendent with all the trappings of Comcast’s many services and products. The series of commercials which direct audiences to the site feature futuristic locations where people travel on a form of personal transport called Power Boosters, squirrels play guitars and families gleefully sing and merrily dance at the prospect of living in a super-connected urban enclave with ubiquitous super-fast broadband internet. The lyrics from the “Future Hopping” spot which are sung over a repurposed tune from the film Juno (Reitman, 2007), are giddily fantastic and technically aloof yet they perfectly reflect the near future narrative so typical of techno-hyped advertising: “Happy hi-tech automatic / Exponentially ecstatic / Speeding forward, future hopping / Always dreaming, never stopping” (Goodby Silverstein and Partners, 2009). This genre of advertising, while vague on the specifics of their technological superiority and even more obscure when it comes to their application, also peddles a human centred narrative, the “co-habitation” of Zygmunt Bauman’s light modernity. This techno-cultural construction is built on the fantasy that the devices and services being sold will somehow “come alive” in the hands of their prospective owners. In most cases the imagery tries very hard to give the viewer a sense that these products – while being unimaginably sophisticated and technologically superior – have very personal attributes. While the network maybe electric, the interface is somehow organic. They have an inherent “social” value,

Figure 86 Comcast High Speed Data with PowerBoost commercial, “Hair” (Goodby Silverstein and Partners, 2007a)

35 A link to a promotional video for the Comcast Town website and social media environment by the agency who produced the campaign, Goodby, Silverstein & Partners (San Francisco) can still be found at the One Show Interactive awards website for 2010. Promotional videos and creative credits can be found at the Inspiration Room.
they have “soul”, and they take our “wellbeing” to heart. This is something completely at odds with the iconography of the liquid electric narrative and the networked lifestyle being depicted in the snappy imagery and cool sizzling motion graphics. But in most of these commercials there are carefully placed glimpses of these humanising attributes at key narrative junctures.

In the IBM “Data Baby” commercial we see intimate images of an infant, the data curling and swirling around her clenched fist (see Figure 87 Top Left); in the DHL “International Specialists” campaign the yellow streak of energy, after circumnavigating the globe at incomprehensible speeds finally comes to rest in a gentle buzzing swirl of kinetic energy in the palm of a hand (see Figure 87 Top Right); the Samsung Galaxy 4 campaign website greets the idle web surfer with the banner “Life Companion” and the golden hour imagery of two young girls one white and one distinctly not, holding hands and skipping innocently through a neighbourhood park juxtaposed against the graphic of two Galaxy S4s, one white one black (see Figure 87 Middle). But the synergy between the technically obscure use of the liquid electric imagery and the human properties of the devices and services they perpetuate is most literally depicted in the web video “Unleash Your Fingers: Next Generation” for Samsung Mobile France for the 2012 edition of the Galaxy SIII handset (see Figure 87 Bottom). In this choreographed video two performers directly handle the swirling aqua graphics, stretching them and framing them with their hands and their bodies, considering their plastic-electric properties as controlled yet dynamic substances. The advertisements conceit of course, is that the liquid electric motion of the graphics and the symbiotic movement of the two performers embody the potential dynamism and obvious inherent humanity of the product and the fluid dreamlike state of lifestyle the device permits. Yet, in this space of flows where there is no device, no text to allude to functions or services, the imagery is completely devoid of any technological artefact. Rather it is a streamlined performance of an explicitly artificial nature – ultimately the graphics, the data and the liquid electricity giveth life. The information flows through us, is all around us and in this space, in this closed world we have become the embodiment of the technocultural narrative. But what is presented here is a false dream. As Thomas Hughes observes, this is “an artificial space inside a computer or a computer network. In this space nothing exists except abstract non-physical information” (T. P. Hughes, 2004, p. 106).

In a contemporary twist on the Chevrolet film, Leave It To Roll-Oh from 1939, Mazda Corporation has produced a promotional film entitled, “The All-New Mazda6 Infographic”. A central part of its ‘Driving Re-Energised’ campaign for 2012, the video was a web only infomercial designed to highlight the technologically advanced design and futuristic engineering of the new Mazda6 line of vehicles. In terms of the scope of its language and superfluous sloganeering the video has similarities in tone with both the DHL and IBM campaigns and matches the ambition of the Samsung
Figure 87 The personal touch of the liquid electric (From Top Left): IBM commercial, Data Baby (Ogilvy & Mather, 2010); DHL “The International Specialists” TV Commercial, (180 Amsterdam, 2011); “Samsung Galaxy S4 Life Companion” website home page image (Cheil, 2013b); “Unleash Your Fingers: Next Generation” web video for Samsung France (Heaven, 2012).
clip by claiming that the vehicle represents the “soul of motion” (Garage Team Mazda, 2012). This reassuring fantasy of political correctness conjured by Garage Team Mazda is designed to relieve the potential driver of any feelings of culpability for the blatant act of carbon pollution production that driving a 6 cylinder car produces. This vehicle we are told, is an “energy conservation machine”, it has a “regenerative breaking system” that “redistributes its energy reserves” to help run the vehicle’s electrical instruments, such as its “interior lighting” and “climate control.” The commercial claims these components are evidence of Mazda’s “smart futurist thinking” and that – somewhat confusingly – that the car embodies “the spirit of an animal that is ready to pounce on its prey”. The commercial which is comparatively long, at 2 minutes and 49 seconds, then goes on to explain the benefits of systems it calls “i-ELoop” and “i-Stop” by employing blue kinetic streams of electricity emanating around the vehicle while an enthusiastic voiceover tells us how “clever” and “revolutionary” the vehicle is while reassuring us that inside this “brilliant new Mazda” technology “lives and breathes” (see Figures 88A & B). As in most commercial appropriations of this kind, Mazda’s in-house design agency has adopted a (now) familiar tactic of blending the language of climate science and computer technology into their pitch. A potent, if distracting mix. This comes at the expense of more standard automotive concepts such as “power” and “control” and “speed” and “safety”; rather we are regaled with an alluring graphical expose on the unseen machinations of computer logic embedded within the language and iconography of its branding. The liquid electric ambition here is the “soul of motion” as it is in the follow-up campaign in which Mazda partners with Paramount Pictures to promote both its 2013 Mazda6 model and the forthcoming Star Trek sequel, “Into the Darkness”. Here we see the same aesthetic design employed: a cool, gilded electric blue within a void of infinite blackness in which the outline of the Starship Enterprise gels seamlessly with similar imagery of the “all new” Mazda6 (see Figures 88C & D).36 Like the “tiny robots” in the Chevrolet film and Google Search’s “404 Error” screen a similar fantasy has been constructed by LG Electronics, for their 2008 campaign “Advance Technology. Beautifully Hidden” (see Figure 89). While the title itself is a neat summary of the conceit of the digital objects collected in this survey of techno-cultural advertorials, it is also a fabulous convergence of millennial iconography. The techno-futurist dreamscape is swiftly constructed in a domestic living room by everyday metallic household objects which morph from the conventional forms into exotic luminescent automatons. These regularly inanimate objects perform a merry dance – buzzing, whirring and clicking as they orchestrate a holographic projection of pastel rainbows of hot white lights, a large glowing orb and finally a swirling gaseous electric light. The advert cites numerous science fiction touchstones in

36 Even as recently as April 2014, Mazda was still using the electric blue aesthetic in their promotional design with the “Neuron” advert for the new Mazda 6 Atenza launch in China.
Figure 88 The electric blue aesthetic in cinema (From Top Left) A-C) The All-New Mazda6 Infographic web only promotional video for Mazda Australia (Garage Team Mazda, 2012); D) Star Trek: Into the Darkness/ Mazda Corp. product tie-in (Abrams, 2013); E) Star Trek: The Motion Picture (Wise, 1979); F) Tron (Lisberger, 1982); G) Star Wars: Episode VI – Return of the Jedi (Marquand, 1983); H) The Matrix (Wachowski & Wachowski, 1999)
rapid succession, the mechanics of *Short Circuit* (Badham, 1986) and the *Transformers* series of films (Bay, 2007), the holographic visualisations of the original *Star Wars* trilogy (Lucas et al., 1977-1983), the cute wobbly choreography of *Toy Story* (Lasseter, 1995) and, most evocatively, the ethereal bejewelled swarm of space crafts in *Close Encounters of the Third Kind* (Spielberg, 1977). Then in a classic Spielberg trope, the family sedan pulls into the drive – the domestic realism interrupting the other-worldly fantasy – the headlights reflecting up the living room wall scattering the tiny automans as they hurriedly scurry up the mantelpiece and fold themselves like Tetris blocks into the relative safety of the sleek LG LCD black mirror perched upon the wall. Once again all meaning, all understanding, all potential examination of the product and its technology is subjugated by a facade of the digital sublime rendered to stunning effect by the dense Futurist imagery.

This meeting of technology advertising and the promotion of a science fiction fantasy film brings full circle the history of this prominent visual aesthetic in both advertising and motion picture cinema. The heritage of sparkling, crackling – sometimes violent – blue electrical energy is dotted throughout science fiction cinema from the mysterious unknowable energy field lurking on the outer edges of the galaxy in *Star Trek: The Motion Picture* (Wise, 1979) (see Figure 88E), to the first appearance of a visible representation of “the force” in the original Star Wars trilogy when the Emperor infuriated by Luke Skywalker’s loyalty to his friends and his failure to join him on the dark side, conjures a deadly blast of blue electricity to strike down his young counterpart (see Figure 88G). And perhaps most tellingly, for the approaching millennial period that would emerge and gather pace in the early 1980s, the “digitiser” in the first incarnation of the *Tron* series uses a blue electrical laser beam to decode the molecular properties of human flesh and author their avatars a new virtual self (see Figure 88F). This pre-empts William Gibson’s cyberspace from *Neuromancer*, by creating a video game stylised interpretation of his since often quoted description of the virtual artifice of the network: “A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the non-space of
the mind, clusters and constellations of data. Like city lights, receding” (Gibson, 1984, p. 69). The light on the dark. This is the liquid blue world of *Tron* and the luminescent green data trails of the *Matrix* rendered some fifteen years later. But more significantly, these images, these notions of the liquid electric, the incomprehensible technologies of the everyday and the magic and mystery of the Futurist CyberCity are cast against a dark, seemingly impenetrable palette. It is in the properties of these visual design elements that the template for the dark gothic aesthetic emerges. And it is in these intersecting histories that the neo-gothic tendencies of millennial technoculture haunt the digital archive.

I return to the notion of the light on dark aesthetic - or more precisely in this context, illumination upon a black canvas. Here the liquid electric gives presence to the unseen. We have seen so far how this has been established as a dominant techno-cultural aesthetic across the 20th Century and beyond: search lights probing the night sky, arc lamps illuminating the Eiffel Tower, the Trylon and the Perisphere, incandescent bulbs bejewelling the Pan American, the carnival and the streetscape, blinking orbs directing the flow of traffic, neon signs screaming at the pedestrian throng, data visualisations of physics, economics and climate science, the CGI tricks of animators and media designers – all of them like Apollinaire’s diamonds in space.

Nowhere is this more apparent than in the evolution of this form - the electric blue aesthetic of contemporary sci-fi story telling. Here the darkness provides the context for the illumination, the depth and space for the action, the surface texture for a deeper ill-defined anxiety. This is embedded in the mathematics of visual display algorithms and the digital production technologies of computer animation. The first ever film to feature complete animated sequences derived solely from computer generated images (CGI) was Disney’s *Tron* (Lisberger, 1982). The film borrowed many of the sci-fi tropes developed in earlier cinematic work such as *Star Trek: The Motion Picture* (Wise, 1979) and *Star Wars: Episode IV – A New Hope* (Lucas, 1977) and included existential flourishes which echoed the inter-dimensional explorations of Kubrick’s *2001: A Space Odyssey* (Kubrick, 1968). There is a cognisant central computer, a worm hole, a collapsing universe and the very familiar (1980s) icons of 8Bit computer gaming – secret research laboratories, menacing red lasers, marauding tanks, clunky gun turrets, chunky crumbling environments, flying aircraft, tractor beams and sporty fluorescent outfits. The film’s major shortcoming of course is the market demographic. There’s plenty of fun to be had in Disney’s first animated feature for the Atari generation and the actors play-up to the material accordingly but there’s certainly no screen time given to any thoughtful examination of many of the film’s more existential moments. By association, we the viewer, must accept that this universe exists, that this is a computer program and we are living in it. However, in one scene there
is a glimpse of logic at work, either by design or sheer expositional necessity occurs. Two lab scientists (resplendent in appropriate scientist garb - lab coats, goggles and hard hats) discuss the impending test of the film’s central novum – the ray-gun that can digitise an object into computer code and then return it to the real unharmed. Ultimately this will become the method by which the central characters are appropriated into the computer program from which the film gets its name. The following is a neat summary of not only one of the film’s key moments but also the premise of the liquid electric conceit:

**Lora**  
(young female technician)  
Well, here goes nothing!

**Dr Walter Gibbs**  
(elder eccentric scientist)  
Hmm, interesting ... Do you hear what you just said? You said, ‘here goes nothing.’

Well, actually what we propose to do is to change something into nothing, then back again. You might as well have said, there goes something, here comes nothing.

At which point the ray-gun emits a blue laser – or as the scientists are overheard muttering, “a UV scan” - that engulfs a test object – an orange fruit - “dismantling its molecular structure and suspending its molecules in the laser beam”; aka the virtual world (see Figure 90). In another sequence, sometime later into the film the central characters who have been “digitised” and are now fugitives inside the computer program stumble upon a rippling stream of fresh water. In a peculiar, almost childish manner, they rush to the water’s edge and gleefully begin to scoop up the liquid drinking from the shimmering electric blue stream. Dramatically, it’s an uncomfortable scene, a quaint diversion from the main narrative; at odds with the film’s dramatic tone and completely outside of the film’s logic. While it’s possible to deconstruct this as a typical “in-game reward” i.e. water, the giver of life, conveniently appearing in the path of the game players, who being human are the only participants in this contest who would benefit from its existence in a virtual world otherwise codified as unnatural and devoid of all organic matter. But we could also read this as one of the earliest cinematic manifestations of the liquid electric form, its properties giving life to the digital, giving human-like attributes to the errant computer code and like the social animals we have become, giving forth the waterhole to which the tribe is inexplicably drawn.

---

37 Interestingly, the colour orange is the primary colour counterpoint to the predominately blue aesthetic once the film shifts into the virtual environment of the computer game.
In addition, if we were to take a broader view of the film’s aesthetic precedent – a highly stylised art direction which accentuates the streamlined design rather than trying to obscure the origins of the film’s code, we can begin to see how such a device is so appealing in the context of advertising. The much heralded special effects are almost the contemporary digital motion artist’s first draft or production designer’s pre-viz storyboards; these are the outlines, the plot points, the mud map rather than the substance of the end game. Here we see the wire mesh of the 3D design as characters tumble between the real and the virtual (see Figure 90), while object movement is jerky and pixels are drawn as exaggerated forms to heighten our sense of depth and space. Here the surface is the stuff of the real, the embellishment is the code running in real time and controlled from the outside – out there, in the darkness the electric blue aesthetic points the way. Somehow, from nothing, comes the essence of technology, like an exotic seductive force that is from nature but not of nature. In this instance, in the liquid electric’s very first cinematic rendering, we can decipher the emergence of a dark permeating aesthetic in digital media design. One of the earliest moments in which the luminescent promises of the techno-cultural narrative began to unravel.

Figure 90 Tron (Lisberger, 1982)

Is the implementation then of this uniquely digital design aesthetic – the liquid, the light, the laser, the code – the agreed aesthetic position to signify a “going back”, to articulate a truth, to source the
origin of the digital/human hybrid species? Is this the “jet quenching” that results from the collision of lead ions close to the speed of light in the Large Hadron Collider? After all, as Ian O’Neil relates in his article, *In the Beginning the Universe Was Liquid*, in 2010 scientists discovered that in the $10^6$ seconds after the Big Bang at temperatures 500,000 times hotter than the sun’s core, the conditions created something akin to a “primordial soup” which behaved much like a liquid:

Immediately after lead ions collided, jets were created by the quarks and gluons blasting away from the micro-Big Bangs. By monitoring how these jets formed, physicists were able to see how the intensely chaotic turmoil evolved… As they tangle together, jets lose energy through interactions scientists are only just beginning to understand. This loss of energy is known as ‘jet quenching’ (O’Neil, 2010).

If we take a cursory look through the gamut of speculative science fiction cinema from the late Modernist to the mid-Millennial period it’s obvious that production designers and auteurs have relied heavily on the blue electric motif to express such ideas. Nowhere is this more explicit than in the long gestating sci-fi parable *A.I. Artificial Intelligence* the Steven Spielberg (2001b) rendition of a passion project left behind by the late Stanley Kubrick based on the short story, *Super-Toys Last Summer* by Brian Aldiss (1969). The story, published the year following Kubrick’s *2001: A Space Odyssey*, deals with notions of rampant overpopulation, climate change, loneliness and social engineering. David, the central protagonist, is a robot engineered for a childless couple. He believes that he is unique; he believes his adoptive human parents love him because he is a “real little boy.” David is forced to confront the dystopia of his true reality when he is abandoned in the woods by his adoptive mother. The isolation of being a robot (a Mecha) in a human (an Orga) built world, seems impossible for David. He who thought himself to be special, to be unique and who deep down believes his mother still loves him. And so begins his quest for the real – to be “made into a real little boy” so he might regain the love of his human masters. In a world in which so much is synthetic and so many of his kind are nothing more than discarded or banished refugees living on the fringes of society, his quest has a distinctly contemporary gothic subtext. As
the source code of his origins is not in his DNA but rather in the patent files in a lab somewhere beyond “the end of the world”, to be made real it would seem is a fruitless endeavour.

His immortality is his curse, his quest his folly. The aesthetics of the production design comingle with the central metaphors for an origin story, a tale David believes in his engineered innocence must begin with the Blue Fairy, a character with mythical powers he recalls from the story of Pinocchio. The idea of the Blue Fairy is the first measure of this aesthetic ideal that will make an ongoing appearance at critical junctures throughout the film and especially as the story arc of the last act begins to unfurl (see Figure 92 A-C). At first we see the electric blue neon reflected upon the wet bitumen of Rouge City, then in the sky blue eyes of Dr Know a holographic carny that purports to provide answers to the unanswerable questions. The answer he supplies David is, of course, a ruse. This too is a program, a hack in the source code, embedded in the sleazy sexual Mecha of Rouge City to lead the industrious David back to his maker, Dr Hobby. There is the promise of the Blue Fairy of course, and like any clever sleight of hand David is driven hopelessly on towards his goal and the tragic fate which awaits him.

**Dr Know**

Discovery is quite possible. Our Blue Fairy does exist in one place and in one place only — at the end of the world where the lions weep, here is the place where dreams are born.

**Gigolo Joe**

Many a Mecha have gone to the end of the world, never to come back. That is why they call the end of the world: **man-hattan**.

**David**

And that’s why we must go there.

**Gigolo Joe**

What if the Blue Fairy isn’t real at all, David? What if she is magic? The supernatural is the hidden way that unites the universe? Only the Orga believe what cannot be seen or measured. It

---

38 This shift in story and locations takes A.I., which up until this point is probably one of Spielberg’s more underwhelming science fiction outings, into more transformative territory that is more in keeping with the playful distortion of time and place carefully modelled on Kubrick’s extensive research and planning. However, even this is not beyond critique and many Spielberg critics feel that this was a step too far although opinions on the origin of the film’s structure, including its ending, differ.
is that oddness that separates our species. Or what if the Blue Fairy is an electronic parasite that has arisen to haunt the minds of artificial intelligence? They hate us you know, the humans, they will stop at nothing. They made us too fast, too quick and too many.

- David and Gigilo Joe receive the answer they are looking for from the hologram Dr Know (Spielberg, 2001b)

They of course travel to Manhattan, the end of the world, with the iconic torch of the Statue of Liberty poking out of the vast acidified ocean that has now engulfed the once thriving metropolis. David unfortunately does not find the answer he has been promised, instead he discovers that he is far from unique, like Buzz Lightyear in *Toy Story*, and that the truth is much more banal and commercially derivative than either of them would ever have expected. Confronted with the true horror of his robot self David falls, like a bag of wooden limbs, from a precipice upon high, the Rockefeller Centre. The helpless form of a broken hearted ‘boy’, plummets downwards, adopting the now iconic pose of the falling man, down, down into the icy waters of the mangled trenches of the city below. The gleaming blue fractures of light splinter about his splayed form – the visual icon of his dark euphoric turn. For David this is not the origin story he has so desperately been seeking. Instead he becomes frozen, cemented in the permafrost for a millennia. Deep down in the darkness he assumes the thousand year stare of the robot in the garden. His ultimate prize, the angelic Blue Fairy eludes him. But like all broken promises she does exist as an inanimate decorative carving on a pirate ship in what was once Coney Island now sunk deep beneath the flooded boulevards of New York city, circa 2142.

Here the Futurist narrative takes a stunning turn in contemporary
cultural production, especially on the vast pop culture loop that is Hollywood cinema. A subtle aesthetic shift to be sure, but a prescient one all the same. This distinct aesthetic intent that predates the darker moments of the coming decade is a recurring theme in many of the most recognised Futurist techno-cultural narratives of this period: *iRobot* (Proyas, 2004), *Minority Report* (Spielberg, 2002) and more recently *Pacific Rim* (del Toro, 2013). These films are particularly resonant as the liquid electric ambition is the central novum – the hybrid intelligence of the man/machine prototype designed to transcend its most extreme intellectual pursuit. For *iRobot*, it is V.I.K.I. (Virtual Interactive Kinetic Intelligence) the central supercomputer which controls the massive swarm of networked robots designed to serve the human population (see **Figure 92D**). V.I.K.I. is connected to the core, and just like in *Star Trek*, the core upon which everything else relies is electric blue. Through learning from the less than savoury examples of human behaviour, V.I.K.I. – in an ultimately fatal decision – decides to fundamentally alter Isaac Asimov’s 1st Law of Robotics: “A robot must never harm a human being or, through inaction, allow any harm to come to a human” (Josh Jones, 2012). In *Minority Report* the future is predicted by three “precogs” who can predict crimes so perpetrators can be intercepted in pre-emptive strikes. There too, the precogs are feminine, vastly superior and yet vulnerable to corruption from external forces. As they lie in a pool of water their minds are as one, the water electric blue (see **Figure 92E**). And in *Pacific Rim* the Earth is under attack by monstrous alien forms that have been lying dormant beneath the earth’s crust for many millennia. To fend them off, humans develop gigantic mechanical exoskeletons piloted by two human warriors. In a neat re-routing of Castell’s “flows” this process is known as “the drift” in which the minds, the memories and the consciousness of the human pilots are melded into one in order to operate these vastly complex machines. Each melding of minds, each resumption of conflict, is a convulsive moment of electric blue rushing (see **Figure 92F**). In each instance the visual motif of the electric blue aesthetic is present and most discernible when the central novum of these films is revealed. And in each instance, similar to the bright electric blue water in *Tron* and the Blue Fairy in *A.I.*, this visual signifier refers to the origin of the parable: the man-machine symbiosis, the core, the beginning, the code.

This is also strongly evident in the replication of computer code and networked systems in the promotional collateral for large civilian and military contractors who deal explicitly with the notion of cyber security. The depiction of knowledge as at-risk data capital and information security as a vital process of software and machine function is almost always blue, electric and all pervasive. Here the use of the liquid electric is just as vital and dramatic as anything Hollywood might construct as the electric ambient blue 1s and 0s cascade and sizzle like the strips of code in the *Matrix*, falling like rain liquidising the solidity of the urban space, the office block, the subway and the stock.
exchange into a living organic pool of liquid code. Several companies which appear at other intervals throughout this text are represented here too: Northrop Grumman, Boeing, BAE Systems and Raytheon Company as well as the US Air Force and US Army’s cyber divisions, all of whom subscribe to the blue logic of the liquid electric. There is a consistency to the colour palette of these advertorials, promotional videos, graphical demonstrations and corporate brochures – wherever you might be, whatever your electronic communication needs are, the steadying hand of encryption and the stealth like stalking of cyber threats is inevitably signposted by the reassuring blue ambience of the liquid electric (see Figure 94).

And yet there is a site where this sense of peace and of calm and of notional safety is most strongly felt. It is a place where the blue liquid motif most profoundly demonstrates the origin parable – far from the digital renderings of the cinematic text, or the commercial communication device or the business of information security. It is the oasis, the soft waters of the shallow pool in the otherwise dry and desolate savannah. Here amidst the maddening crowd is the origin of the species, the genesis of life on Earth, the gathering of the clan. Commonality of need and the essence of extraordinary beginnings is brought into startling relief by a simple visual allegory. Cai Guo-Qiang’s installation work *Heritage* at Brisbane’s Gallery of Modern Art is that site. It is the central piece in an exhibition entitled, *Falling Back to Earth* which pre-empts the return to nature subtext that would appear to be emerging so strongly in the broader techno-cultural narrative not as an option, or a simulation but as an absolute. Here the complexity and diversity and commonality of nature is represented by 99 animals hunched over the water’s edge lapping at the cool blue liquid. They have gathered like a disparate tribe of interlopers in a pilgrimage from multiple continents from forests and grasslands and hillsides all driven by necessity summoned back to the beginning in an elaborate reconstruction of what could be the dwindling resource at the heart of any number of fragile ecosystems – beyond the code, beyond the server farms, far beyond the electric – it is the call of fresh water.

Guo-Qiang’s work is often large in scale and dramatic featuring trails of gunpowder and fireworks and controlled explosions but it can also be intricate and subtle, in *Heritage* Guo-Qiang has found a simple peaceful aesthetic that presents an audience with the possibility of a more layered somewhat darker reading, “They could see it as tranquil and quiet but there are complex issues... there are environmental issues around the world. People can look at the works and see all sorts of different things” (Murdoch, 2013). According to the notes on the exhibition, the work is perhaps neither an origin story or Utopian destination but rather a struggle with the journey itself, “the idea of coming full circle – of working through competing aspects of human nature, as well as the obstacles we face in our relationships with our environment and each other, now and into the
future” (GOMA & Cai Studio, 2013). As Guo-Qiang himself has observed of the shifting focus of his practice and the evolving notion of the self in the physical world, “I am shifting my focus from the universe and cosmos back to earth. I am now thinking more about the earth, our surroundings, and the physical world” (Zeccola & Stone, 2013). And as it was some half a century previously, it is the liquid blue aesthetic which leads us back to the duality of the techno-cultural narrative and its neo-gothic sense of infinite wonder and endless futurity. Just as Brand and Bowie had observed in that famous colour image of the Earth from the depths of space: “the planet earth is blue, and there is nothing that I can do” (Bowie, 1969).

Figure 95 Cai Guo-Qiang’s installation work Heritage at Brisbane’s Gallery of Modern Art (GOMA & Cai Studio, 2013)

/////

From Edison’s Electric Tower, to Balla’s illuminated boulevards, to the cinematic renderings in Tron and A.I., to the kinetic blue electricity of the Mazda6 and the seismic “drift” of Pacific Rim, the Futurist colour palette has been refined to a signal of a most singular hue. It is streamlined, it is electric blue, it is the source code. In this chapter I have demonstrated how the blue hue of the present-future space – the site of fiction, the site of fantasy, the site of consumption – has taken on Gatsbyesque proportions: the blue electric orb shimmering across the inky black estuary of a convergent cultural narrative. The attraction of its design malleability apparent in its presence across cinema, media design, corporate advertising and the gallery space.

In the coming section I will demonstrate how the background of this media construction – the subtext, the darkness – breeds an atmosphere of uncertainty and endlessness. I will first establish however, the manner in which the techno-cultural narratives of Microsoft, Ericsson and Nokia produce archetypal Futurist constructions not dissimilar to the fantasies of the World’s Fair of 1939.
It is in these texts that the most explicit articulation of the broken promise of the new Utopian idealism is expressed. A neo-gothic anxiety is a logical consequence of this false-future, especially if it is allowed to permeate the broader cultural network. I will therefore attempt to confirm the inevitability of the dark euphoric moment as embedded in the fabric of these simulated digital futures.
Figure 96 Tribute in Light designed by The Municipal Art Society of New York. This image captured by Songquan Deng on September 11, 2011 (The Municipal Art Society of New York & Deng, 2011).
03 The Promise

One of the earliest memories is of my father bringing home this wooden, box-like thing, with a cloth grille on the front, and a little round, circular television screen, which, I believe, we had for some time prior to there actually being any broadcast to receive.

And then there was a test pattern. I think the test pattern preceded any actual broadcast for several weeks, and the test pattern itself was only available briefly, at scheduled times. And people – neighbours – would come, and they would look at this static non-moving pattern on the screen that promised ... something.

- William Gibson interviewed for the documentary No Maps for These Territories (Neale, 2000)

Why do so many people spend their lives sitting in front of a computer or television? I have never had a television. People are becoming more and more remote. We are becoming robots. It is this lack of humanity.

They say adapt or die. At my age, I feel I can’t adapt, because the new age is not an age that I grew up to understand. I see everything as cutting corners. All the old-fashioned ways of doings things have gone.

- Retired art teacher, Anne, 89, quoted before her assisted suicide in Zurich Switzerland on March 27 2014. From an article in Britain’s The Mirror newspaper, “Retired art teacher took her own life at Swiss suicide clinic after being ‘left behind by digital age’” (Layton, 2014)
03 :: 01 Future Pixel Perfect

If you could see everybody in the world all the time, where they were, what they were doing, who they spent time with, then you could create an entirely different world. You could engineer transportation, energy, and health systems that would be dramatically better. It's this history of thinking about signals and people together, and how people work via these computer systems, and what data about human behaviour can do, that led me to the realization that we're at a phase transition. We are moving from the reasoning of the enlightenment about classes and about markets to fine grain understanding of individual interactions and systems built on fine grain data sharing.

This new world could make George Orwell look like an unimaginative third stringer. It became really clear you had to think hard about the privacy and data ownership issues. Things that George Orwell didn't realize were... that you can watch the patterns of people interacting then you can figure out things like who they're going to vote for and how they're going to react to various situations like changes of regulation, and so forth. You could build something that, to a first approximation, would be the real evil empire. And, of course, some people are going to try and do that.

- Alex “Sandy” Pentland in conversation with Edge.org, Reinventing Society In the Wake of Big Data, on August 30 2012 (Pentland, 2012)

The troubling conceit of the commercial provocateurs featured in the previous chapter is that the gloss and sparkle of the futurist pitch does little to empower the user or to imbue them with any tangible technical knowledge. There is a distinct absence of the mechanics of its operation or the history of its origin. The lavish sci-fi visual aesthetic of technology marketing does however propose a near future reality of personal technological transcendence and functional convergence. In the melding of mind and machine, the end user becomes moribund in Jaron Lanier’s buzzing incontinent hive as communication networks are likened to the “human nervous system”, cities become “organisms”, and software replicates itself as a “virus” or a “bug”. The individual then, the original replicant, becomes an anonymous clone lost in the rhetoric of the hive. As Lanier attests, “bits are presented as if they were alive, while humans are transient fragments. Real people must have left all those anonymous comments on blogs and video clips, but who knows where they are
now, or if they are dead? The digital hive is growing at the expense of individuality” (Lanier, 2011, p. 21).

The futurity of these biological metaphors conveniently assist the electronics manufacturer’s and service provider’s desire for uninhibited access to the user’s attention; it is their dream sequence as much as ours. What better way to achieve that rapt attention than to plug directly into the revenue source? For the production pipeline, for the subscription service, for the machine, we are only a proprietary socket away from the zeitgeist. And while Lanier’s much maligned hive may been compromised by the hive’s inability to shape shift and its individual member’s inability to separate the commercial from the personal, the meaning from the mush, and the observer from the observed – as with any proprietary free will, the hive’s true exploitative power lies in the totality of its mass. Here their “temporal analytics” – their moods, dreams, transactions, associations, movements - become an information of riches, the holy grail of Big Data hunters and gatherers (Musante, 2010).

At the moment, many electric power suppliers extol the advantages of plugging into their respective networks and vie for the favours of the socket seekers ... This seems to be the dystopia made to measure of liquid modernity – one fit to replace the fears recorded in Orwellian and Huxleyan-style nightmares (Bauman, 2000, p. 15).

But how could this be? The pitch would seem plain enough: the techno-futurist narrative has our wellbeing at heart. Surely technological utopianism can circumvent almost any challenge – personal, professional, external or otherwise. Even the most horrific notions of the real could be washed away by the potential of technology to liberate us from repetitive work routines, the banality of labour-intensive domestic chores and the slow exchange of information. While some aspects of this ideology are certainly true – especially in the realms of manufacturing, the domestic space and personal communications – the totalising vision proposed by the likes of DHL, Microsoft, Nokia and other imagineers is far from the experience of our everyday reality. Microsoft’s attempts, for instance, to define the user experience through its advertising and marketing collateral reinforces this notion of an intangible future. Their strategy exposes the inherent ambiguity of trying to define the multifarious activities of the devices which run Microsoft software without succumbing to techno-futurist fantasy. Even Microsoft’s recent tile-centric overhaul of the interface of its Windows operating system, informally known as Metro, seems informed by the production design of an icon of early sci-fi computing fantasy, Stanley Kubrick’s 2001: A Space Odyssey (see Figure 97). Yet corporate flirtation with fantasy idealism, especially projections of a future world are not just restricted to TV commercials and advertising ephemera, many companies actively engage in
speculative fiction and release these ‘visions’ and ‘predictions’ to the wider public based presumably on heavy investment in R&D. Microsoft, Nokia, DHL and Ericsson have circulated numerous idealised visions of the near-future in recent years via sophisticated high-end video productions. Unlike the grandiose promises made by General Electric and Westinghouse in the 1930s, these videos whet consumer appetite by setting scenarios only a few years out from release. Microsoft for example has issued two projections: in 2009 the Microsoft Office Labs Vision 2019 video appeared and then an update, Productivity Future Vision, was released in 2011 tackling very similar themes. The clips generated from their Office Labs R&D arm, focus on productivity and engagement with ambient information. These near-future scenarios are depicted with a cinematic design aesthetic showcasing a sanitised version of familiar technologies including touch controls with credit card like interfaces, 3D image interaction with Office products, situational awareness, environments embedded with cameras (and projectors), shared video walls, wafer thin glass screens and dynamic ink on a variety of surfaces including glass, plastic and what appears to be paper. The art direction in both depicts an idyllic manifestation of early 21st century urbanism: clean lines of acrylic, stainless steel and glass, fluid public and private spaces, graceful motion, commercial free graphic design and robotic smiling avatars of our future productive selves (see Figures 98-101 and 106-110). These “lifestyles” and the augmented “technologies” play directly into the future design space of contemporary marketing in urban architecture and interior design. The intersecting design aesthetics of these advertorial narratives support a vision of the future which mimics the projected desire of consumers: a perverse un-reality because the vision is devoid of the commonality of the everyday object, the messiness of human behaviour and the proliferation of commercial visual signs which makes such a future seem so unlikely.

A support network of websites and downloadable collateral is also available to explain the content of these virtual video futures to help audiences appreciate the complexity of what lies
Nokia and Ericsson focus on their vision of a device dependent future in two corporate videos: *Mixed Reality – Nokia World* (Nokia, 2009) from their “Mixed Reality Experience Team” and *The Social Web of Things* (Ericsson, 2011) from the “User Experience Lab” at Ericsson. Again the ubiquity of embedded cameras, touch controls, facial recognition and miniaturisation is at the forefront of the narrative but with the addition of wearable interfaces and streamlined devices which are “socially aware” (see Figures 100 & 101). Again a plethora of ancillary content including corporate mini-sites and downloadable brochures trumpet the serious side of such future speculation - a dense interconnected web that blends corporate investment spin with speculative futurist fiction. Curiously more weight seems to be given to the fictional avatars and their relationships than to the technology. However, even the technology at times displays human characteristics appearing playful, cognisant and stubbornly persistent. The overarching themes in the films are strongly associated with the personal and the social connotations of this future narrative. Each video goes to some length to try and establish a clear link with the tangible devices they are showcasing. In the support text for the Nokia film, under the banner “Nokia Research Centre”, they claim that their “Mixed Reality Experience Team” has a mission “to provide enriching service experiences meeting people on their terms in their fused physical-digital worlds.”
(Nokia, 2011) And of course everyone is exceptionally beautiful in this corporate vision of the future. These post-present-avatars – from beyond the black mirrored screen – live a seamless, fluid streamlined existence devoid of targeted advertising, product logos, software watermarks, and copyright notices, protected from pollution, rust, phishing scams and conflict minerals, free from the mundane rituals of recharge cables, software updates, user names, passwords, brand lock-in, cluttered twitter feeds and uncomfortable status updates.

We get to know the avatars too: “David Ericsson” is a pleasant enough fellow who dreams of an intimate social life with another unseen but supposedly equally gorgeous clean cut avatar “Sophie”, however his dinner date is rebuffed – we do not hear the conversation, but witness the forlorn exchange as he drives home from work. Meanwhile his “Home” – with whom he communicates with regularly throughout the film – has been busily orchestrating all his domestic appliances for the imminent dinner date. However, when things change the “Home” swings into action with consolatory text messages and (in an act of inspired damage control) orders our sensitive leading man Chinese takeout for one and a pay-per view stream of the beautiful game (see Figures 106 & 107). Meanwhile, Microsoft has all the bases covered in a multilayered narrative involving “Ayla”, the conscientious Mum who on business trips finds comfort in technology that keeps her safe in unfamiliar places and (when all the hard speech writing and PowerPoint design work is done) also enables her to maintain her domestic
duties via virtual cake baking with her daughter (see Figure 108). Then there is “Qin”, the token Asian, who is reminded by a device in his pocket that while he’s waiting for a train he could be making better use of his time by donating to a neighbouring country less fortunate than his own (see Figure #). Finally young “Shannon” who wants to bake a cake and enjoys doing so with her Mum, Ayla by video conference while with her father spends an inordinate amount of time clicking and swiping and touching his fridge to see what’s inside rather than just opening the door and having a look for himself (see Figure 109). Meanwhile in the Nokia Mixed Reality film we witness the beginnings of a typical day for a cheerful young blonde avatar woken by a window displaying an apologetic text message from her beau, “Tom” – a cheerfully persistent young flirt – who makes all manner of effort in the featured three minutes to cast a technological spell upon our leading lady as she goes about her day. A day which mostly consists of relaxing in a sumptuously bright, breezy cottage replete with sandalwood furnishings and lime and white cotton as she reads via her Google Glass like device, news about cutting edge climate change initiatives, a stable EU economy and Britney Spears’ farewell gig on Mars (see Figure 111).

There is considerable effort put into not only the production qualities of these films, which are rich in production design and
misty on the cinematography but also the online support material that seeks to humanise the “social” aspect of these young good looking people. But they are, for want of a more precise marketing term – cyborgs/ bots/ skin-jobs - at best exotically complex emoticons. They are no more real than Viki in iRobot (Proyas, 2004), Maria in Metropolis (Lang, 1927), Gigolo Joe in A.I. Artificial Intelligence (Spielberg, 2001b) or even the comfort bots in Real Humans (Hamrell & Akin, 2012). This is as futuristic in its unattainability as any other commercially produced environment yet the difference is that while the humanoids from central casting might seem somewhat alien the technology is not. In this present-near-future there is a familiarity of both interface design and production aesthetic – the functional interactions, the touch and voice commands, and the glimpses of application features are nothing we haven’t seen from software packages and website publications before. The industrial design of the objects and devices also seem logical and familiar, in fact the technological forecasts of these productions are so reminiscent of our contemporary experience that this version of future seems oddly nostalgic. But this is not our reality. The simulation of light modernity software and information flows fulfils both our functional and aesthetic ideal of that technology by operating in stark contrast to our present-future experience.
This corporate-machine-vision of the world is produced under the pretext of originating from altruistic sterile “research labs”. This is not the cluttered commercial reality of our brand-orientated experiences; this is a past-present-future stasis which has been sanitised of all corporate intervention. As corporations continue to revamp the techno-cultural narrative via slight judicious tweaks, producing an ever cleaner and sharper aesthetic, the further away the near future appears to be – this creates not only a sense of intangibility but also of an endless inescapable present. Time and space collapse, we are everywhere but nowhere, connected but disconnected. “The question mark has moved from the side of the means to that of the ends. If applied to time-space relation, this means that since all parts of space can be reached in the same time-span (that is in ‘no time’), no part of space is privileged, none has ‘special value’” (Bauman, 2000, p. 118).

The lack of time-space proportions and hence the value of the pursuit or the discovery of knowledge also breeds a distinct lack of meaning; ubiquitous access becomes a de-motivator for the truth – if the truth is omnipresent it does not need to be found. The device aesthetic is at best vacant, purporting knowledge without actually containing any. It is a slip-gate between dimensions as explicit as any electric blue fiction: the clean cut lines of Apple products, the coloured Metro tiles of the Microsoft interface, the Eriksson touch screen, the Nokia data glasses are all genuine functions of the consumer as vacuous conduit between information and device, the Mecha and the Orga – the new aesthetics of man and machine collapsing in on one another. As Melanie Swalwell notes, in her deconstruction of contemporary experience advertising, this is a very deliberate ploy by corporations and advertisers to link the personal experience directly with the design value of technology:

The current period of technological change is one in which technology has increasingly come to be seen in aesthetic terms, that is, in terms of the senses and sensory experience. It was not always thus: until quite recently, technology was still frequently alleged to be asensual and anti-aesthetic, in line with classic humanist fears about technology’s alienating and dehumanising potential. Recent discourse on the experiential has been a factor in turning around such unfavourable impressions, to the point where technology is now frequently marketed – and, I argue, increasingly understood and felt – in terms of aesthetic and affective experience (Swalwell, 2012).

39 Ericsson also goes so far as to have a bespoke research site that explains the hypothetical use of the human body as interface and conductor of information, the ultimate triumph of the society of information; see the “Connected Me” research site.
This methodology is an extension of an already established paradigm within advertising\(^40\) however in this evolving space, technology is commodifying reality through the promotion of unrealistic social and personal benefits. The special value of experience – of going there to see – is transferred to the aesthetic value of the object – the device – and the access to the virtuality it provides. The adoption of smart phones and personal tablets is widespread and their increasingly sophisticated functions, which are essentially convergent properties of other consumer electronic devices, are being used as the primary drivers for the design of the future and the betterment of the individual. Personal fulfilment lies in the acceptance and mastery of this convergence and the sharing of such wisdom with others in a hyper-reflexive space of social media “push and pull”. Even the video campaigns described above have associated social media content, not on Facebook or Twitter or Instagram, but rather on bespoke corporate representations of such social media applications. In this idealised corner of the web AdWord panels, banner ads and the ubiquitous “like” and “share” buttons are conspicuously absent (Figures 112 & 113).

The authoring of the network as pure, as clean, as unadulterated is perhaps...

\(^40\) Also see Selling Good(s): On the Genealogy of Modern Advertising from Pasi Falk’s classic text The Consuming Body for an historical account of this practice including the beginnings of experience advertising as designed by the Americans in the first decade of the 20th century, curiously at the same time as the Futurists were unfurling their technological manifestos.
the most fabulous fiction of all. We recognise the narrative conceit for its unreality and we can certainly identify the imposition placed upon us by the information generated because of our ongoing cohabitation with the precursors of these technologies. We understand that benefitting from the vast accumulation of information, can also be a curse. The weight, density and enormity of the present information torrent breeds anxiety and isolation through an ambiguity of context and meaning. The negation of individual identity becomes the entry fee to the hive but also the prize for those who would seek to exploit the hive. As Freeman Dyson observes, “the immense size of modern databases gives us a feeling of meaninglessness. Information in such quantities reminds us of Borges’s library extending infinitely in all directions. It is our task as humans to bring meaning back into this wasteland. As finite creatures who think and feel, we can create islands of meaning in the sea of information” (F. Dyson, 2011). This is a heavy burden to bear for the iUser. And if the guidelines for our interaction with information are confined to the social space of Microsoft, Nokia and Ericsson’s playfully naive virtual worlds then a coordinated effort to gain a deeper contextual understanding of information beyond the surface of the social media soup – to once again traverse the chasms between time and space – could be a futile endeavour. This is Futurist vapourware at its very best.

The problem is not lack of context. It is context collapse: an infinite number of contexts collapsing upon one another into that single moment of recording. The images, actions, and words captured by the lens at any moment can be transported to anywhere on the planet and preserved (the performer must assume) for all time. The little glass lens becomes the gateway to a black hole sucking all of time and space – virtually all possible contexts – in upon itself. The would-be vlogger, now frozen in front of this black hole of contexts, faces a crisis of self-presentation. In (Eving) Goffman’s terms, the would-be vlogger is “out of face” with no “line” to present, unable to size up the context and situation (Goffman, 1967, p. 14). Like a building collapse, context collapse does not create a total void but a chaotic version of its once ordered self (Wesch, 2008).

This infinitude of contexts and access points for the iUser is the premise of my creative work, the photographic installation Cyber City Mesh (Goodwin, 2011a) (see Figures 114-116). Constructed mostly from documentary photographs, the work attempts to articulate the multiplicity of the iUser’s networked experience in relation to the Cyber City, itself a manifestation of the network. The iUser becomes an informational node in a larger grid-like structure connected by device and data but also as a functional node, an active juncture, where they become plot points on the narrative circuit as consumer, documentarian and game character. In this space the central characters are commuters and pedestrians, head tilted down towards their screens, engaged yet anonymous citizens, not so much buzzing, but bubbling deep in Lanier’s virtual hive.
Cyber City Mesh is presented on a light table, the surface covered with an enlarged section of a Google Earth map showing the Akihabara prefecture of Tokyo, also known as Electric Town. This visual design plays with Virilio’s reduction of the horizon line accentuating his “dromoscopic” view of the world in which the spaces of consumption and the site of haptic interaction become displaced, disturbed, rearranged into a top-down drone’s eye view of topographical space: “We suddenly jump from real-space de visu and in situ to the real-time tele-objectivity of an acceleration whereby the spaces of perception, the optical space and the haptic space of the tangible, undergo a disturbance – a topological or, more precisely, a TOPOSCOPICAL disaster” (Virilio, 2007, p. 20).

The core premise of the Cyber City Mesh is the capturing of the commuter, the pedestrian, the observer as they engage in private communications and interactions and capture, send and archive their environment as they navigate the grid of the Cyber City. My research documentation of commuters on Tokyo’s subway system and pedestrians in the luminescent surroundings of the Vivid Live arts festival in Sydney’s Circular Quay in 2010 are the source materials for the images which form the core of the Cyber City Mesh. They depict an engagement with both the internal and the external space of flows embedded within the code of the devices they grip in their hands. In the Tokyo subway where the shifting earth below makes the occasional audible grumble, the horizon literally becomes a dark reductive tunnel as the screen’s device provides the only means of escape.41 The Vivid Live event in Sydney is a multi-art multi-media festival incorporating “ideas” (speakers and

41 Mobile phone flashlight applications were the most downloaded applications in the aftermath of the Japanese earthquake and resulting tsunami in March 2011.
demonstrations), “music” (mostly electronica) and “light” (installations and projections). The outdoor project mapping onto Sydney landmarks such as the Opera House, Customs House and the Museum of Contemporary Art is a gaudy millennial evocation of the World’s Fairs of the late 1880s. Here too glowing orbs of two dimensional surface textures projected onto pillars of sandstone, concrete and ceramics provide a startling spectacle for the audience swarming from the hive and out into the streets and walkways surrounding Circular Quay.

Printed on translucent paper the high contrast silky visage of the pedestrians and commuters bleed up from the light table below much like the mobile phone screen which is the
object of their attention. The irregular placement of their portraits in the frame of the Google Earth print is at odds with the strict grid lines of Electric Town and brings to mind Wesch’s “chaotic version” of the Cyber City’s once ordered self (see Figure 115 & 116). At the centre of this installation is the ominous red glowing orb of the Earthquake early warning system, a commonplace object in Japan and a very real and very machine-like symbol of the omnipresent danger lurking below the grid itself. The portraits which surround this image then seem inconsequential, themselves absent in their distraction born of the device and the electronic dreamscape rather than of the earth or of the simulated concrete edifice that hems them in.

What the commuter as consumer experiences then is less of the device, less of the technology but more of the role of avatar in an advertorial, their peak-hour screen immersion a “hyper-stimulation often presented as desirable, part of what it meant to be up to date, fully experiencing the present” (Swalwell, 2012). The luminescence of the subjects in the photographs upon the light table and their unwavering focus on their screens is heavily weighted with our knowledge of what is to come. The foreboding anticipation of these images brings shades of the apocalypse into being. The end can be felt in the garish posters, the exposed pipes and cabling, the exit signs, the columns of cement and the curving tiled walls which enclose the Tokyo commuter within its underground embrace.

////////

The luminescence of the spectacle of the big screen advertorial, the empty visage of the end times, the public space of the digital commons is a dense narrative mesh. As Daniel Miller notes in “On the Post City” in his analysis of the post-zombie apocalypse:

The creatures embody the flip−side of a total environment that is less a real city than a virtual environment coded to look like one. The former is a space of encounters, intimate revolutions, sudden exposures. The latter is a frozen world of static. Immersed in the amniotic embrace of communications technology, which offers the promise of surfing on your interests forever, the full spread of a user’s psychic demands can be met (Miller, 2009).

And if that seems a limited vacuous description of the techno-futurist promise in comparison to the grandiose manifestos of the Futurists and the corporate purveyors of the World’s Fairs who relied so heavily on the big picture narrative, then perhaps it is because it is. In this chapter we have seen how Jaron Lanier’s notion of the “hive mind” has diluted the notion of the individual and that corporate imagineers have commodified the concept of that individual as a homogenous networked node. My
creative work Cyber City Mesh explores the inverse of this as the iUser seeks to participate within the hive but as a far more active and engaged urban netizen; albeit through the mediated prism of the screen. Meanwhile Virilio’s tele-objectivity has begun to shrink the dreamscape stepping back the focus ring of Futurism as the collective turning away begins – away from the trauma of context to a smaller more manageable personal screen space.

The future dreaming of Microsoft, Nokia and Ericsson have made the future a personal one. The horizon line is shrinking with the atmosphere, the future the receding sunlight beneath the door. The new frontier – the one that the Cyber City is prepared to comprehend – is now only screen deep. Tomorrow’s future pixel perfect narrative of a grand urban utopia as once promised by the widescreen vistas of General Motors and Westinghouse has now been dramatically recalibrated. As I will demonstrate in the following chapter, even that harbinger of space exploration NASA has had its wings clipped and its ambitions stalled as corporate branding and military interests hijack the space exploration narrative. The outcome of this is that the future becomes a simulation; a beautiful sequence of animations and colour composites in which even the fabric of the universe is only pixel deep.
Figure 117 The Empty Quarter - Meridiani Plains. Opportunity took this image while stuck in the sand ripple dubbed Purgatory for over a month. (NASA, JPL-Caltech, & Cornell University, 2009)
03 :: 02 Space Dreaming

The most pressing question we now face, we might well say, is who and where we are as a society. Bonds have been broken, trust abused and lost. Whether it is an urban rioter mindlessly burning down a small shop that serves his community, or a speculator turning his back on the question of who bears the ultimate cost for his acquisitive adventures in the virtual reality of today’s financial world, the picture is of atoms spinning apart in the dark.

- Archbishop Rowan Williams, Christmas sermon at Canterbury Cathedral London, Sunday 25th December 2011 (R. Williams, 2011)

While the iUser wrestles with life on the ground in the Cyber City corporations and government-funded agencies are busy commissioning big picture events to rekindle the utopian tropes of last century’s space dreaming. The synthetic constructions of the future are not so much the ambition to conquer new frontiers but to deliver a hyper-stimulant variation of the space oeuvre contained within a range of social media strategies: the megapixel snapshot, the precarious Go-Pro clip, the glossy animation, the crackling sound bite, the robotic selfie and the real time twitter post. This is the era of the Red Bull space jump (coming down not going up), Virgin Galactic space ports (without the space flights), 3D gaming developed by the Department of Defence, the expansion of fossil fuel mining to asteroids, astronauts on the 6 o’clock news singing David Bowie songs (or was that Astronaut Idol?), the monolithic alien-claw like constructions of U2 concerts and of swimsuit models floating in zero gravity (see Figure 118). This often gaudy and shallow posturing fills the void when the big picture stuff of space exploration contracts, when long term planning is vapourised by economic rationalism and organisations such as NASA must realign their priorities and adhere to the commercial parameters of more earth-bound challenges. With the absence of an Apollo, with no more Space Shuttles left to do their bidding and only images of rocks coming back from the Mars Rover, NASA has surrendered the celestial dreamscape. Commercial enterprise now renders new horizons with visions of spaceports, rocket ships and interplanetary colonisation. NASA recognises that their territory is being invaded, not by aliens or asteroids or even by their international counterparts – Japan, Russia and the European Space Agency – but by angel investors, tech messiahs and corporations who commission high-end articulations of the future complete with power-drink
Figure 118 The commodification of space. (From Top Left): A) Model Kate Upton aboard Zero X for a Sports Illustrated photo shoot; B) The Mars Curiosity Rover takes a selfie and posts the image to Twitter (NASA & JPL, 2012); C) Felix Baumgartner, sporting Red Bull and Zenith logos, prepares to make the 38.6 kilometre free-fall from the edge of space (Humphries, 2012); D) Photographer Michael Najjar’s image of the Virgin Galactic spaceport from his Outer Space series; E) “The Claw” stage design from the U2360 tour; F) Astronaut Chris Hadfield sings David Bowie’s Space Oddity in a live stream from the International Space Station; G) Concept art of the DSI-Harvester by Deep Space Industries (Deep Space Industries Inc., 2013).
branding and commercial product licensing. What we get in return then is an extension of the science fiction tropes of the techno-cultural advertorials of Microsoft, Mazda, DHL, et al. Rather than laying out a road map to the stars, NASA has taken up the speculative fiction business announcing in 2011 a publishing deal to develop a “NASA inspired ... series of science fiction themed books”. The NASA press release goes on to say, “the enormous popularity of science fiction is a key element in this collaboration to make the books a gateway to the general public and generate awareness of the significant role NASA plays in our everyday lives” (Alaxander, 2011). In a new spin on an old technocultural tale this deal accompanies an already fierce social media campaign surrounding all things space. In a recent article, Wilson da Silva, editor in chief of the science magazine Cosmos writes:

Space is hip again. Whether it's a Felix Baumgartner skydiving his way past the sound barrier – setting Twitter and YouTube on fire – or the space shuttle Endeavour pulling big crowds in the streets of Los Angeles, the final frontier is back in vogue. Social media is now what television was to the early days of the space race; but it's also a more personal way for the closet space fan in all of us to connect directly with the exploration of the cosmos. Take the rover Curiosity: it has 1.2 million followers on Twitter, to whom it tweets its daily routine as well as links to pictures and video... NASA astronaut Mike Massimino, whose Twitter handle is @Astro-Mike, has 1.3 million followers, many of whom watched live as he became the first person to tweet from space. And shows like Big Bang Theory (23.5 million fans on Facebook) – whose characters banter about Mars rovers and physics non-stop – have helped make rocket science a lot cooler than it used to be (da Silva, 2012).

Da Silva argues that the frenzy around the Red Bull space jump, Richard Branson’s Virgin branded Space Port, Amazon CEO Jeff Bezo’s New Shepherd VTVL and former PayPal CEO Elon Musk’s SpaceX project constitute a new engagement with the exploration of space. But we are still on the ground and not going anywhere anytime soon. The most spectacular and visually arresting imagery to come out of NASA in recent years has not been film documentation, or a live broadcast of an event or even actual photographic documentation of a real phenomenon, rather it has been either composite images produced with data visualisation techniques or CGI video animations of a proposed future event. The most stunning of these creations was NASA’s Mars Science Laboratory Curiosity Rover Mission Animation (NASA, 2011a) launched on NASA’s YouTube channel and picked up by most major news networks in April 2011. The video is a magnificent construction of space dreaming with a level of cinematic prowess equivalent to anything produced at a Hollywood effects house. The narrative is dramatic rather than scientific, the editing of sequences typical of the science fiction genre while the choreography of the virtual camera accentuates drama over technique. But the sound is the most pronounced element, both realistic and as compelling as one could imagine such an event being – even in the silence of deep space – and from the safety of one’s computer.
screen. The sound emphasises the power and mechanics of the descent and the intricacies of the innovative multi-stage approach to the Martian surface. This is film fantasy 101, and the narrative of NASA’s attempt to replace the real with the unreal is embedded in the Mars Curiosity film making program. While the mission itself is a genuine scientific experiment of profound ingenuity and technical bravado (the sheer audacity of what was attempted bears considering in terms of the currency of techno-futurism’s more nebulous pronouncements), the predictive and glossy tone of the web videos has essentially replaced event documentation with cinematic simulation. The grainy realism of the Apollo photography has been usurped by high-gloss, high-resolution CGI animations of JPL’s PR department. Further to this in June of 2012, a little over a month before Curiosity’s scheduled touch down on Mars, using footage from the Curiosity Rover film, NASA manufactured its own dark euphoric moment: Curiosity’s Seven Minutes of Terror (NASA, 2012). The animated video by the Jet Propulsion Laboratory, featuring NASA Entry Descent Landing (EDL) Engineers who orchestrated Curiosity’s harrowing descent through the Martian atmosphere, is an attempt to dramatize the unseeable while cheerleading the efforts of the scientists and engineers who made the eventual successful landing on the Martian surface possible. At the very beginning of the video Adam Steltzner, NASA (EDL) Engineer, sitting in the X-Files-esque glow of a desk lamp surrounded by blueprints of the Curiosity mission, sombrely proclaims: “When people look at it, it looks crazy. But that’s a very natural thing. Sometimes when we look at it, it looks crazy.” And then, with a smirk and cocked eyebrow he concludes, “It is the result of reasoned engineering thought. But it still looks crazy” (NASA, 2012); hence the video. In thirty-eight attempts to reach Mars the global space community has only managed eighteen successful missions, of the eleven missions to the Martian surface only four have successfully completed their intended remit (NASA, 2013f). At less than a 50% success rate, NASA’s Curiosity Rover mission at a cost of $2.5 billion – in a fiscally conservative US political environment - needed as much positive PR as the film makers could conjure (NASA, 2011b). The dramatic tone, including an increasingly foreboding orchestral soundtrack foregrounded the essence of Steltzner’s earnest speech:

From the top of the atmosphere, down to the surface, it takes us seven minutes. It takes 14 minutes or so for the signal from the space craft to make it to Earth – that’s how far Mars is away from us. So when we first get word we have touched the top of the atmosphere, the vehicle has been alive – or dead – for at least seven minutes on the surface... That is known as the seven minutes of terror (NASA, 2012).

In a curious turn of Sterling’s act of supersonic falling, the dark euphoric moment here is characterised by a literal darkness. The “terror” of the film’s title becomes the absence of data: no
Figure 119 Using footage from the “Curiosity Rover” film NASA manufactured its own dark euphoric moment: Curiosity’s Seven Minutes of Terror (NASA, 2012).
sound, no coordinates, no vision. One of the 21st century’s most astounding technological feats, a genuinely “strong event”, is rendered weak, unknowable, and unseen by the gothic high-tech sublime. What is left then is a pre-emptive animation, some jingoistic language and a violent statistical breakdown of what might come to pass reminiscent of Scotty’s breathless extrapolations to Captain Kirk on the condition of the USS Enterprise. EDL engineer after EDL engineer takes the viewer through the Rover’s descent with increasingly breathless language as the lush CGI image sequences are paraded before us in a manner not uncommon in promotional trailers for computer games:42

We’ve got literally seven minutes to get from the top of the atmosphere to the surface of Mars. Going from 13 thousand miles an hour to zero, in perfect sequence, perfect choreography, perfect timing and the computer has to do it all by itself. If any one thing doesn’t work just right - its game over ... We slam into the atmosphere and develop so much aerodynamic drag that the heat shield heats up and glows like the surface of the sun - 1600 degrees ... During entry the vehicle is not only slowing down violently through the atmosphere, but also we are guiding it like an aeroplane to be able to land in a very narrow constrained space ... Mars has just enough atmosphere that you have to deal with it, otherwise it will destroy your space craft ... The parachute is the largest and strongest supersonic parachute we have ever built to date, it has to withstand 65 thousand pounds of force ... It opens that fast, it is a neck snapping nine Gs! (NASA, 2012).

And if the parallels with mainstream popular cultural marketing tropes were not explicit enough the film ends with the touchdown time and date of Curiosity’s scheduled landing on Mars: “Curiosity touchdown 10:31pm, PDT, August 5 2012.” Certainly, once the Curiosity Rover began sending its first test images back to earth the true triumph of the NASA team’s engineering feat would become obvious to the entire world but the setting of the scene, the hip construct of the video assemblage and the dramatic Hollywood-like sheen of the films had not so much raised the public’s awareness as taken NASA’s manufactured space dreaming to new heights.

Yet where there is light there is also dark and NASA’s Asteroid and Comet Watch program is also involved in the simulation of imminent celestial events, and with some urgency, as two profoundly ominous constructions reveal. In early 2012 astronomers at the La Sagra Observatory in Granada, Spain observed an asteroid, 2012 DA14, moving in an earth bound trajectory that by February 2013 would see it come within 17,200 miles of the earth’s surface and 5000 miles within the geosynchronous satellite orbit. This of course fed into the increasingly hysterical internet chatter

42 For a more detailed breakdown of comparable promotional footage from the video game industry see the discussion of Homefront (Kaos Studios & THQ Inc, 2010) and Battlefield 4 (Electronic Arts & Dice, 2013a) in Chapter 03::03 Digitizing Dystopia.
about the reported end of the Mayan calendar in November of 2012, fears which had been fuelled by Roland Emmerich’s epic disaster film *2012* (Roland Emmerich, 2009). The discovery of a rogue asteroid produced global headlines which would routinely link 2012 DA14 to a possible apocalyptic scenario in which the asteroid did in fact strike the earth.

The UK’s *Daily Mail* typifies the tabloid media’s sensationalist framing of the event. In an article published 24 hours prior to the scheduled fly-by entitled, “Asteroid that could do as much damage as 1,000 atomic bombs will whizz past today (and could knock out your TV signal)”, journalist Fiona Macrae’s introduction to the story is riddled with anxiety inducing rhetoric:

Is it a bird? Is it a plane? No, it’s an asteroid that will almost hit Earth – relatively speaking. Just before 7.30pm today, a 150ft wide chunk of space rock will whizz past us in the closest shave since records began. If it hit the planet, it could wipe out a city the size of London and do as much damage as 1,000 of the atomic bombs dropped on Hiroshima... scientists say there is a small chance that TV signals may be affected (Macrae, 2013).

NASA’s contribution to the hysteria – and self-perpetuating myth making – was to use the event to create realistic simulations of the close earth encounter by releasing a sequence of animated films and statements by NASA scientists in an effort to explain away any irrational fears.  

43 While the two most publicised and most sampled films are discussed here, NASA released numerous other web-based films during the weeks leading up to the arrival of 2012 DA14. This included an educational film for their YouTube *Science Cast* series, *Record Asteroid Flyby* (NASA, 2013j), on January 28th 2013; OSIRS-Rex Targets Near-Earth Asteroid (NASA, 2013h) on February 2nd 2013 and the curious unedited interview footage posted on the Goddard Space Flight Center web page, *OSIRS-Rex Principal Investigator Dante Lauretta,*
The most prominent films were released via the Jet Propulsion Laboratory’s YouTube channel, the first appeared on February 2nd 2013 (thirteen days prior to the scheduled fly-by). *Asteroid 2012 DA14 Flight Path* (NASA, 2013c) was a short thirty second visualisation of the asteroid’s ominous trajectory passing earth which, as the opening text roll attests, was “generated using the Eyes on the Solar System visualization software” (see Figure 121).\(^4^4\) Released simultaneously, *Asteroid 2012 DA14 to Safely Pass Earth* (NASA, 2013d), was no doubt created to refute the doomsayers who would be stirred up by the hellish possibilities conjured by the imagery in first instalment. While this is a calm and practical explanation as to why the earth would be spared on February 15, it is an unsettling view of how close—and how quickly—such an object can come to earth having emerged from the signal noise of deep space less than twelve months previously. Of course the asteroid passed by as predicted however the imagery that NASA constructed was eerily similar to the imagery of the 2005 documentary *Miracle Planet* in which a collision with a 500km wide asteroid is simulated to terrifying effect. Most prominent in my mind however were the final scenes in the Lars Von Trier film *Melancholia* released in 2011.

Through the evolution of images sequenced in Figures 121-123 the transition from asteroid as monstrous world ending event as depicted in the fantasies of *Melancholia* and *Miracle Planet* to humble space rock duly labelled, catalogued and tracked is given a heightened sense of the real by the visualization of scientific data by NASA and its exploitation by the popular media. The association of the asteroid with the dimensions of a football pitch and the recalling of the 1908 Tunguska blast in the depths of Siberia make the

\(^{44}\) This is a curious use of language: “the Eyes” being the software that turns data into images, are not eyes at all. Yet the phrase “the Eyes on the Solar System” would suggest that NASA is indeed monitoring the solar system and that one would suspect that some human eyes are somehow involved in such an endeavour.
NASA fiction a measurable real world terror thereby creating a perfect blend of gothic high-tech anxiety.

And yet all of this would suddenly seem frighteningly real. On the morning of February 15, approximately sixteen hours before 2012 DA14’s scheduled arrival, a meteor (or as NASA reported, a “relatively small asteroid”) about 20m in diameter weighing some 10 tonnes entered the earth’s atmosphere and exploded over Lake Chebarkul about fifty miles from the small town of Chelyabinsk in the Southern Urals of Russia. Researchers believe that, “at its most intense, the meteor fireball glowed 30 times brighter than the sun causing skin and retinal burns” (Sample, 2013), and according to NASA, “the Chelyabinsk event was an extraordinarily large fireball, the most energetic impact event recognized since the 1908 Tunguska blast in Russian Siberia” (NASA, 2013b). However, due to the lag time between the Chelyabinsk event and the arrival of 2012 DA14, eyewitness video and photographs (see Figures 126-133) had begun circulating on the internet during the hours that followed the Chelyabinsk event inevitably fusing the two events in the minds of a very nervous public. NASA put out a press release late on February 15 entitled, Asteroid 2012 DA14 - Earth Flyby Reality Check, refuting claims that the two events were linked stating:

According to NASA scientists, the trajectory of the Russia (sic) meteor was significantly different than the trajectory of the asteroid 2012 DA14, making it a completely unrelated object. Information is still being collected about the Russia meteor and analysis is preliminary at this
point. In videos of the meteor, it is seen to pass from left to right in front of the rising sun, which means it was traveling from north to south. Asteroid DA14’s trajectory is in the opposite direction, from south to north (NASA, 2013b).

And later on the same day, still hours before the arrival of DA14, NASA again reiterated in an update to the “Reality Check” press release stating, “NASA’s Near-Earth Object Program Office can accurately predict the path of the small near-Earth asteroid 2012 DA14. There is no chance that the asteroid might be on a collision course with Earth” (NASA, 2013b). What would play out in the media and most tellingly on the web in the days that followed was a plethora of online videos showing the meteor entering the atmosphere and exploding across the Russian sky. These were either harrowing eyewitness videos from cameras tilted towards the meteor’s fiery trail or footage pulled from CCTV cameras on street corners, on the sides of factory walls and within premises directly affected by the blast radius of the meteor as it exploded in the atmosphere. These are truly terrifying sequences especially in the context of what was purported to be taking place later that day: images captured from in-car dashboard cameras record the meteor’s entry into the atmosphere – one can actually see the meteor appear from nowhere – before it disintegrates into a blinding flare of light (see Figure 129); traffic comes to a momentary standstill as the intense light temporarily bathes the icy Russian streets in a moment of surreal mid-summer daylight; office windows are seen imploding, factory walls are blown down, crowds of people scatter, office workers cringe in doorways and under desks (see Figure 132). The audio track in many of the videos is particularly harrowing especially those which capture the deafening sound of the meteor exploding overhead. In one terrifying sequence we hear the hysterical screams of school children as they run across the snow.
covered playground in search of shelter (see Figure 131). An eyewitness to this hysteria, teacher Valentina Nikolayeva, described the apocalyptic scene as “that kind of light doesn’t happen in life, only at the end of the world” (Pilditch & Stewart, 2013). Another described the moment of impact as a “terrible flash, it was red-orange! My eyes are still hurting. I turned off all the lights, sat the kids on a couch and waited... Oh, my God, I thought the war had begun” (RT News, 2013e). Twitter provided an insight into the thoughts of users who were too petrified to emerge into the daylight, instead they articulated their deepest fears: Katya Grechannikova wrote, “I am all shaking! Everybody says that a plane crashed”; Bukreeva Olga added, “I first thought that my house is being dismantled, then I thought it was a UFO, and my eventual thought was an earthquake” (RT News, 2013d). The title of the RT News network’s Breaking News coverage that morning was “Apocalypse Now” (see Figure 130).

What makes this incident all the more perverse is that the township of Chelyabinsk was within the 1,200 square mile fallout site of the Kyshtym disaster in 1957 in which the Mayak plutonium reactor exploded resulting in the third most serious nuclear disaster behind
Chernobyl and Fukushima. The 1957 explosion was catastrophic and resulted in the eventual evacuation of 10,000 people. Reports of fatalities are vague as is the eventual death toll from exposure to radioactive material as the Soviet Union kept information on the disaster a secret until the late 1970s. “One eyewitness described a ‘terrific explosion’ that shook the earth and buildings, followed by a layer of red dust on vegetation that caused tree leaves and vegetables to curl up and die. People in Chelyabinsk, 30 miles away, reported seeing a red flare that lit up the distant sky” (Shanebrook & Upton Newton, 2007, p. 238). However, for the people of the Southern Urals, including the township of Chelyabinsk, the memories of the past – of red skies, of strange lights on the horizon and the ferocious shaking of the ground - must give rise to deep, latent anxieties about the meteor impact of 2013.

In the months that followed the latest Chelyabinsk incident investigators located fragments of the meteor determining its origins date back to the very first formation of the planetary systems which constitute the universe. As Mike Wall writes, “The asteroid that exploded over Russia earlier this year died as it had lived — in a welter of chaos and violence” (Wall, 2013). The meteor was once a part of a much larger “parent body” of rock perhaps some 100 kilometres wide and that the chunk that eventually made its way to earth had originally been embedded many kilometres beneath its surface. According to David Kring of the Lunar and Planetary Institute in Houston, this parent body “suffered a major impact about 125 million years after the solar system started forming. And the hits kept on coming, with the parent body absorbing strike after strike between 4.3 billion and 3.8 billion years ago” (Wall, 2013). This intense battering by asteroids and fragments of larger planetary objects during this period of the solar system’s gestation is known as the “late heavy bombardment”. So what occurred on February 15th 2013 was the end of a very long journey that began with violent beginnings of the universe itself. This is apocalypse at the speed of light, but also a very real gestation of the idea that the horizon line is the author of the unexpected, the mysterious and the horrific. The inner constitution of the Chelyabinsk meteor and the manner of its most unexpected arrival makes for an ominous and unexpected discovery for aerospace science and particularly those gate keepers of the heavens, NASA. While the world’s collective attention and technology was focused on a patch of sky that was the expected flight path of asteroid 2012 DA14, another object weighing some 10 tonnes entered the Earth’s atmosphere at a speed of 19 miles per second with enormous destructive potential. Later that year when scientific research into the impact was published in the journals Nature and Science, Ian Sample writing in the Guardian newspaper summarised the findings detailing alarming statistics of the Chelyabinsk meteor’s heat and power:

45 For more on this see Suokko and Reicher’s article Radioactive waste and contamination in the former Soviet Union (Suokko & Reicher, 1993) and Jeffrey Smith’s Washington Post feature from 1989, Soviets Tell About Nuclear Plant Disaster; 1957 Reactor Mishap May Be Worst Ever (Smith, 1989).
The 20-metre-wide space rock hurtled into the skies over the city in February and began to tear apart at an altitude of 28 miles. Travelling at a speed of 12 miles per second, the rock exploded with the energy of around 500 kilotonnes of TNT ... At its most intense, the streaking fireball glowed 30 times brighter than the sun, leaving people on the ground below with skin and retinal burns. One resident in Korkino, 18 miles from the point of peak brightness, lost skin from their face after being burned by radiation. The intense heat evaporated three quarters of the meteor. Around four to six tonnes reached the ground as meteorites, representing just 0.05% of the original rock (Sample, 2013).

These are the statistics of a dark euphoric moment. In a rare global confluence of intrigue, fear and scaremongering when all eyes were - figuratively at least - scanning the sky, we found ourselves looking in the wrong direction. The web, social media and the mainstream broadcast media were the distraction as a completely valid – and very real – threat fell from the sky in a cold faraway place.

While NASA’s two previous series of film simulations – Mars Curiosity Rover and 2012 DA14 – were based on the mathematics and science of an imminent event, an even more ambitious techno-futurist fantasy from the NASA video production unit was to follow. In keeping with this new ethos of “scientific-fiction” film production the AMA JSC Advanced Concept Lab conjured an animation designed to quell the suspicions of the popular media and the blogosphere by the intertwined events of the 2012 DA14 asteroid and the Chelyabinsk meteor. What was explicitly needed was a narrative which debunked the growing fear that the sky could indeed fall in at any moment and that no one really knew when, where and from which direction – especially NASA who appeared to be looking in the wrong direction on February 15th. Depicting the capture, mining and redirecting of a rogue asteroid, Animation Asteroid Redirect Mission (NASA, 2013e) is a slick piece of space propaganda. As demonstrated by the relatively minor events of February 15 2013 the idea of an asteroid falling from the sky does conjure plausible visions of the apocalypse – the fire from above, the vaporisation of forests and cities and the liquefaction of mountains and the reconfiguration of entire continents. The blue planet rendered cold and dark and lifeless much akin to Mars itself – a return to some ancient cosmic truth. Yet in NASA’s techno-futurist vision – and here there is no narration or well-scripted engineers – an animated sequence of a spacecraft gently docking with the already captured asteroid is a serene and peaceful engagement with the falling rock. Although the asteroid is presented as a threatening menace from the deep reaches of the universe as it hurtles towards earth’s orbit – the accompanying music is sombre - Animation Asteroid Redirect Mission actually projects a cheerful techno-futurist promise (see Figure 134). 3D generated astronauts climb out of the docking craft and gracefully scale the asteroid, drilling into its exposed surface and ritualistically sealing the precious cargo into a containment vessel ready to be
summoned back to earth for future extra-terrestrial studies and no doubt a quick Twitpic for the NASA Twitter account.

While social media may represent a new flood of statistics about hits and likes and audience share it doesn’t cover up the fact that space, for all it’s worth is on hold. Instead it is the fiery path of the unknowable object that gives space a new, altogether dark palette. This is not the techno-futurist dreaming that the Apollo, Hubble and Galileo missions had promised, but like the ancient astronomers and their angry Gods it has become an extension of our earth-bound stasis; a place of fear and anxiety. What we are seeing in NASA’s slick media assemblages is the visualisation of space as dark euphoria personified. The experience is twofold: previously futuristic notions of space travel and the technology that underpinned science fiction fantasy have been domesticated by corporations and anything beyond that has been woven into a highly produced synthetic rendering of what could be. All of this of course, operates within the hyper-stimulation of device convergence and the perceived socialisation of information flows, technological prosperity and experience ownership. This keeps the narrative of the conquest of space close at hand and well contained within the Futurist vibration of the haptic-feedback of the touch screen. While da Silva may praise the intimacy of the social media pathways to the pseudo scientists such as Branson and Bezo and the PR boffins who manage the Mars Rover’s Twitter account, “rocket science” was never
Figure 135 The homogenisation of space flight imagery (Clockwise from top left): The U.S. Air Force launches 3rd X-37B Orbital Test Vehicle in 2012; the launch of the Raytheon Company’s Exo-atmospheric Kill Vehicle (EKV) in 2011; the 2008 launch of a Delta II Rocket carrying the GeoEye-1 satellite; the Missile Defence Agency launch of the Space Tracking and Surveillance System in 2008; the Missile Defence Agency launch of the FTG-05 Ground-based Midcourse Defense Interceptor (EKV) in 2008.

Figure 136 (From left to right) Rocketless Launch Series by media artist McLean Fahnestock. “An important part of my work is the reclamation of information from the media and history from institutions and re-presentation it in a way that leads us to address the truth of a situation versus the myth that has been perpetuated.” (Fahnestock, 2010-2012)
“cool”. It was an inspiration, something which manifested in equal measure genuine awe and trepidation.

While TV may be increasingly subsumed by real time news feeds in web browsers it is still the go-to-device for instantaneity and - when separated from the clutter of a studio commentary and advertising – rare moments of human insight. Millions around the world watched Apollo 11’s decent to the moon in 1969 and Neil Armstrong’s first steps broadcast live from its surface. The technological wonder of the Space Shuttle was still very much with us when the Challenger vehicle exploded during its early ascent in 1986. These were real-time events watched live by millions of people around the world, who at those moments had a very real collective experience.

Figure 138 Enhanced Exoatmospheric Kill Vehicle (EKV) concept art (Raytheon Company, 2013a) and a tweet re-posted on the Fox News “Military Tech” website from the EKV developer Raytheon Company about a successful test intercept that occurred on January 26 2013 (Raytheon Company & Fox News, 2013). Spending by the Missile Defense Agency is tipped to rise by US$4 billion over the five years from 2015-2019 (Shalal-Esa, 2014) and (Missile Defense Agency, 2014).

Figure 138 Near earth orbit cargo payloads: Google and US Defence Department partnership GeoEye-1 satellite payload (Google, 2008); Missile Defence Agency’s Ground-based Midcourse Defence Kill Vehicle (Missile Defense Agency, 2011); US Air Force AEHF-2 spy satellite (Department of Defense, 2012).
What we are left with now is space ambiguity, a weak thread in the galactic narrative. We see rocket launches replayed on the nightly news broadcasts, but we have no way of knowing the motivation behind the deployment or the cargo they carry. Travelling under the guise of “weather instruments”, “national security initiatives”, “government payloads”, “communication services”, “space probes” or via the namesake of their commercial sponsors, they are largely abstract notions of space travel. If we were to replay these images side by side without taking note of their annotations (see Figure 135) we could not determine their origin or mission objective as being either civilian, scientific, commercial or military. Even a look inside at their payloads does little to illuminate an agenda (see Figures 138). Media artist McLean Fahnestock whose assemblage of Space Shuttle launches, *Grand Finale* (Fahnestock, 2010) was discussed earlier, has produced a series of digitally manipulated photographic prints, *Rocketless Launch Series* (Fahnestock, 2010-2012) which addresses this visual ambiguity of rocket launch aesthetics but also the absence of meaning their anonymity engenders. The first image in the sequence (see Figure 136) is an appropriation of an image by the US Air Force depicting a US Air Force Minotaur I rocket launching an Air Force Research Laboratory TacSat-3 satellite (see Figure 139). The primary objective of the mission is for the military to test the Advanced Responsive Tactically-Effective Military Imaging Spectrometer (ARTEMIS) system designed to provide “rapid imagery to the warfighter” (Sat News, 2010). With a ground resolution of four metres the TacSat-3 is the “first hyperspectral satellite with the ability to provide reconnaissance within 10 minutes after passing overhead” (Page, 2010). The program is designed and deployed by the Operationally Responsive Space Office which “requires current technologies to be quickly developed and executed from conception to operation in order to fulfil the needs of the warfighter” (Rupp, 2007). By depicting these launch sequence sans rocket,
Fahnestock taps into this underlying military agenda by focusing not on the miracle of space flight but on the secrecy of government and the primitive aesthetics of combustion. The illumination of the propulsion system’s fiery exhaust becomes the focus as we are reminded of the horror of ballistic missile launches, of modern warfare’s conflict by stealth. We are encouraged to consider the violence which gave birth to the space race sixty years previously – the clouds of smoke and gas and a furnace of burning fuel – we are left with little doubt of the archaic nature of the exercise. In technological terms there has been little progress in rocket propulsion systems since the Apollo missions of the 1960s. It is still an expensive, violent act of fire and ice.

These “space missions” are seemingly innocuous, mostly anonymous sidebars to the central narrative of space exploration and a rather cold hangover from the romantic narrative of NASA’s manned spaceflight program. This “space program” does however have a common project manager, The United Launch Alliance, a partnership dating back to 2006 between Lockheed Martin and Boeing servicing the United States government and its commercial partners. While having a wide brief that includes companies like Google and AT&T, and providing support for NASA’s ongoing study of the solar system, its primary clientele are two US government departments – the Department of Defence and the National Reconnaissance Office – which constitute over half of all missions. Of interest to this study however, is not just that these missions re-affirm the past-present-future stasis by being rather unremarkable events, occurring with a seemingly benign regularity and

46 14 from 22 missions on the Delta IV rocket system and 22 from 38 missions on the Atlas Intercontinental Ballistic Missile (ICBM) system. For a detailed list of these launches see the Wikipedia entries for the UAL’s main rocket systems, the Delta II, Delta IV and the Atlas V. Considerable detail about the ULA organisation and promotional media can be found on their website.
blending as they do into the background noise of the media landscape, but that they carry their own visual iconography of a particularly gothic nature. Trevor Paglen is a writer and artist – or perhaps a cultural archaeologist – who has spent a vast amount of his research on notions of space travel, the iconography of the UAL experience, future warfare, CIA black spots and more recently drone surveillance. His 2007 book, *I Could Tell You But Then You Would Have to be Destroyed by Me: Emblems from the Pentagon’s Black World*, documents the patches worn by military personnel who work on top secret US government programs (see **Figures 140-142**). As Paglen observes in the notes to his *Symbology* documentation series which forms a large part of the book:

> These markers of identity and program heraldry begin to create a peculiar symbolic regime when they depict one’s affiliation with what defense-industry insiders call the “black world” – the world of classified programs, projects, and places, whose outlines, even existence, are deeply-held secrets. Nonetheless, the Pentagon’s “black world” is replete with the rich symbolic language that characterizes other, less obscure, military activities (Paglen, 2006).
Commemorative patches such as these are a common addition to serving personnel's uniforms and are often replicated as tattoos but these particular patches are also replicated on the UAL rockets (see Figures 143-144) to ultimately be incinerated on the precipice of space once their precious cargo has been deployed. What does this iconography say about these missions and the culture which surrounds the quest to occupy the near earth orbit and then track, measure and photograph all that goes on below? It is certainly a blend of the modern American gothic, a weaving together of familiar religious and sci-fi tropes wrapped up with a battery of military jingoism. This is a battle cry from the depths of the most convoluted and secretive corners of the Cold War and the Cyber War rapidly replacing it. This imagery simultaneously mocks and exalts the darkest corners of the public's fantasies about secretive government programs, alien worlds, mysterious cults, ancient societies and nuclear annihilation. This is dark euphoria at its most convoluted and frightening best.

The once idealised and romantic vision of space travel seems distant now as it twists into a new hyper-simulation of fantasy, paranoia and military bravado. The residual narrative is a future-present
Figure 148 *Spitzer’s Orion*, a composite of three infrared and three optical images of the Orion Nebulae as photographed on September 17 2011 by the Spritzer and Hubble telescopes. (NASA, JPL, Caltech, & Megeath, 2011)

Figure 149 “Black Hole” illustration by Aurore Simonnet released by NASA (Simonnet, NASA, & Sonoma State University, 2007b)

Figure 150 “Planet-Mass Object Orbiting Neutron Star” illustration by Aurore Simonnet released by NASA (Simonnet, NASA, & Sonoma State University, 2007a)
archetype of a very different kind. Similar to Zygmunt Bauman’s distinction between heavy and light modernity, we are now seeing a very light software orientated interpretation of space exploration on the surface and a slowly emerging gothic high-tech cyber warfare below the skin. Meanwhile, the science of space has taken on a distinctly fantastic visual style. Highly colourised NASA images and artistic renderings of deep space become the new engagement with interplanetary cyber dreams. Images from the Hubble telescope, the Mars Rover and earthbound telescopic arrays render this vista with distinctly science fiction overtones and blend its language and construction with an increasingly refined techno-cultural allure. There is of course the typical “artist’s impression” or “simulated data model” of theories which blend the known trajectory of scientific knowledge as research and the aesthetics of science fiction as design (see Figures 145 & 146). The composite images from the 2012 solar eclipse and the 2011 image composites of the Orion Nebulae are good examples of the practice of blending data with layered sources of colour information to communicate meaning (see Figures 147 & 148). The image of the solar eclipse is a composite of three different views: the central image is a false colour image of UV light taken by the Solar and Heliospheric Observatory (SOHO) spacecraft, one from the ground taken in Queensland by J.M. Lecleire which has been rendered using a filter to enhance the white light coronal structures of the sun and a third image constructed from data also captured by instrumentation aboard the SOHO spacecraft, the Large Angle and Spectrometric Coronograph (ESA/ NASA, 2012). The famous images of the Orion Nebulae are also the results of data, radar and optical sources. The combination of images in this instance come from NASA’s Spitzer and Hubble telescopes (also funded by the European Space Agency) which meld bands of infrared images (from Spitzer) and optical images (from Hubble) to form an image composite – a false colour view – to dramatically render what would not normally be “visible to the human eye” (NASA et al., 2011). This practice is an evolution of a form that dates back to early scientific illustrations which also took their cues from colour theory as well as science fiction in order to communicate scientific knowledge. The use of computer aided design has created a complete melding of these two approaches to the point that they have become indistinguishable from one another. The ambiguity of fact and fiction is a by-product of the technocultural narrative even by the most conservative hands at NASA and the European Space Agency. Here the primary colour palette of the Futurists has been remixed into an image of space millions of light years in the past. Conceptual artist Aurore Simonnet is a scientific illustrator and academic from the University of Southern California who specialises in rendering the data from the research conducted at NASA and its affiliate programs into exotic image constructions for the virtual window.

47 For more information on the construction of the images from Spitzer and Hubble spacecraft see NASA Jet Propulsion Laboratory’s About Colour Mapping Table page.
to the stars that NASA’s cluster of web archives have become (see Figures 149 & 150). While spectacular renderings of the fantastic, these are also dark gothic visions of our universe. Their construction is comprised of sweeping galactic vistas employing a very vibrant use of colour in a dramatic interpretation of some of the more mysterious elements of the galaxy including black holes, supernovas, binary galaxies, and the inner workings of star systems, gamma rays and gas clouds.

**Figure 151** A simulated black hole created by the Large Hadron Collider (CERN, 2013c)

**Figure 152** The ATLAS detector of the Large Hadron Collider. For a guide to scale the detector, note the technician at the base of the image. (CERN, 2012a)
Certainly this is the stuff that dreams (and nightmares) are made of and accentuates the blurry distinction between the politics of the Cold War space race (from Sputnik to Apollo), the Star Wars Missile Defence projects (from Reagan to Obama), the signification of NASA iconography (from rocket propulsion to Martian geography) and the fantastic representations of their sci-fi counterparts (from Kubrick to Spielberg to Nolan). Even the images which are coming out of the largest and most expensive scientific instrument ever constructed, the Large Hadron Collider (LHC) at CERN, are emblematic of this blurring of the real with the virtual and a further articulation of the light on dark digital aesthetic (see Figure 151). The LHC, apart from being an accelerator system for sub-atomic particles, is essentially an imaging machine designed to capture the existence of matter. At its core is the ATLAS observer – the size of a five story apartment block and weighing some 7000 tonnes. ATLAS generates 15 petabytes of information annually, which correlates to 15 million gigabytes of data. ATLAS produces the data that enables the LHC research team to simulate, through immense amounts of information, the material of reality. Simulations such as this “offer an interactivity that makes screen objects seem ‘material’ to the point that contact with them feels like...

![Figure 153](image1.png)

**Figure 153** The simulated data model for the Higgs-Boson from the CMS detector on the Large Hadron Collider (LHC) at CERN. “The lines represent the possible paths of particles produced by the proton-proton collision in the detector while the energy these particles deposit is shown in blue.” (CERN & Taylor, 1997)

![Figure 154](image2.png)

**Figure 154** Event display of candidate Higgs boson decaying to four electrons recorded by ATLAS on 18 May 2012. This image was developed from the data gathered from that event and first published on Jul 4 2012 during the announcement that confirmed its existence. (CERN, 2012b)
engagement with something quite real” (Turkle, 2009, p. 63). So it was for the scientists at CERN and eventually the rest of the world when on July 4 2012 the CERN team at the LHC announced that during the preceding months the LHC had successfully detected the Higgs Boson field and theoretically the Higgs Boson particle (aka The God Particle). It had taken the CERN team many weeks to sufficiently analyse the data to produce an image which articulated the “proof” of its existence compared to an earlier image based on a simulation of a longstanding theoretical model (see Figures 153 & 154). To the casual observer the meaning of these two images are barely distinguishable, yet one posits the truth – or what we are lead to believe is the truth – and the other is a theory for a possible truth. The latter is the image which proves the existence of a material that has always been theorised to exist and which substantiates a missing piece of evidence essential for the Standard Model of physics: “The Higgs boson is the visible manifestation of the Higgs field, rather like a wave at the surface of the sea” (CERN, 2013b). This is the inner fabric of the universe. This image is possibly the most significant scientific image of the 21st century. Yet it is a composite visualisation of a large data set from a machine called ATLAS. This is the simulation that proves the reality. This is one of the most explicit expressions of not only the light on dark digital aesthetic but the authoring of certainty via machine vision, via software, via the x, y and z axis of three dimensional space. CERN has produced the most expensive single frame of wire mesh visualisation ever produced.\footnote{The cost of finding the Higgs boson particle has been placed at approximately US$13.5 billion. For a breakdown and analysis of the cost of building and running the LHC and the associated running costs of programs like the one that found the Higgs boson see this \url{article} by Forbes journalist Alex Knapp. For more detail on the ATLAS detector visit the ATLAS Experiment web \url{page}. Similarly for the Large Hadron Collider visit the CERN project \url{website}. For more on the Higgs-Boson visit the announcement \url{document} released by CERN and the updated \url{page} on the ATLAS Experiment site.}

\begin{figure}[h]
    \centering
    \includegraphics[width=\textwidth]{figure155.png}
    \caption{Dark Euphoria #06 (Goodwin, 2011b)}
\end{figure}
My series of digital prints, *Dark Euphoria* (Goodwin, 2011b), is an attempt to accentuate the properties inherent in the photographic image, not in the sense of magnification or clarity but the inherent digital properties of the light on dark aesthetic as determined by the structural arrangement of pixels and their relationship to the primary colour palette. Being evocative of Sterling’s dark euphoric moment the images are also characterised by an ambiguous sense of foreboding and exhilaration. The first image in the series, *Dark Euphoria #01* (Goodwin, 2011b) (see full colour plate on page 196), examines the notion of light in deep space, it is a cautious celebration of the possibilities of what light may reveal in the dark void. But rather than revealing an inner truth, or of simulating an established data set, this series of images seeks to extrude colour and luminosity from the properties of several photographic images I sampled from an existing archive. The images are distressed versions of the original, the trauma of their manipulation becoming the aesthetic of my intervention in the machine process, the RGB channels of the digital composite stretched, examined and amplified. What is exposed are elements of the unseen, traces of colour and light extracted from small samples of the original photographs – sometimes as little as one 10th of the original canvas – exploited to create new meaning, new vistas, new worlds – the melancholia of a waking dreamscape. Printed on metallic paper in A2 format the physical image has an iridescent quality that conjures twin sensations of hard minerals and the soft malleability of liquid electric currents. Here space dreaming becomes gothic in
the sense that I am submerged in the texture of the digital image. The exhilaration of looking upon the heavens is replaced with the anxiety of the falling star, the failed rocket launch, the phosphorous cloud, the red dust of Chelyabinsk, the drone strike – the night of the long shadows.

Lilting wearily in the present-future stasis, the light on dark aesthetic in this context is a messy hybrid of data (pixels) as image construct and lens based media (light) as a malleable liquid electric function of the machine. In contrast to their original narrative, the new constructions become a veil, a shroud draped over the image plane, a distortion in our direct field of view, making the apocalypse a vaguely discernible thing. But it is there, ever present, etched into the fabric of the image so we can see “without going there to see. To perceive without really being there” (Virilio & Lotringer, 2005, p. 8). Virilio insists that the machine-heightened, effects-laden depiction of reality has reduced our ability to have empathy for our fellow human and by our affliction of the real made virtual by the screen has in fact diminished our scope of vision. What is beyond remains mysterious, unknown, an anathema to real science. Instead the camera is pointed at us - here the television, the browser, the mobile device is looking down at the techno-cultural simulation:

Having worked in the past with a number of painters and stained glass makers, I always felt that the Gothic opening of the great rose windows of cathedrals was less an opening on the sky than an opening on the light of the beyond up above. With the trans-appearance produced by electromagnetism, teleobjective illuminism, on the other hand, no longer opens on anything but here below (Virilio 2007 p24).

Numerous media artists and designers working with the fabric of machine vision are important counterpoints to Virilio’s “teleobjective” vision. For them, bringing out from the dark what is traditionally unseen, to reveal the processes behind the data set (a method similar to the technique I employ with my Dark Euphoria series) is an interrogation of the medium as much as it is an exploration of the possibilities in the mode of output. The properties of illumination and the techno-cultural sub-text of the light on dark algorithmic form are the predominate concerns of my process of media art production when working with the digital still image in this context. In many ways artists and designers are exploiting Virilio’s notion of the “light of the beyond” by manipulating that which lies hidden and unseen. This is not NASA’s simulation, or the United Launch Alliance’s black ops iconography, but a bringing into the foreground of the processes and technologies of contemporary ways of seeing.

Installation artist Robert Henke’s work Fragile Territories (Henke, 2012a) is a projection installation of luminescent shapes which fills the gallery space with twisted and contorted ribbons of
light and sound. Yet the work is routinely obscured by a dark shadow which moves eerily across the projection, obscuring the image, “like a giant blade of a windmill, a negative object that contrasts the bright projection by muting it where it appears. It is not only obscuring the image but also dampening the sounds at its current position and emitting a low frequency noise itself. A dark strong force that puts the rest in an infinitely distant background” (Henke, 2012b). Like dark matter, unseen, but essential to the structure of the universe, the points of light and circuits of Henke’s networked luminescence is embedded with a negative space of an inexplicable nature. Elsewhere sound artist Jean-Pierre Aube uses processing software to generate visual representations of radio frequencies present in the urban atmosphere generated by radio and television broadcasts, mobile communications, defence force communications and public transport services. In the artist’s Electrosmog series (Aubé, 2013), Jean-Pierre Aubé “searches out ambient radio frequency activity in the urban landscape of Montréal, which for Aubé forms a singular territory, characterized by its density in the city and by the political and economic issues that accompany it” (Ingersoll, 2013). Here the veil of the liquid electric is made visible, hanging in the night sky, Aubé utilises the generative representations of radio frequencies as backdrops to the cityscape making a compelling, if somewhat disturbing visualisation. While the Dark Euphoria series attempts to reconstitute the real

![Figure 158 Robert Henke's Fragile Territories (Henke, 2012a)](image)

![Figure 159 Jean-Pierre Aubé's Electrosmog Montreal (Aubé, 2013)](image)
by manipulating the RGB properties of an image it is nonetheless a static snapshot, a two dimensional work preserved on paper. Whereas Jean-Pierre Aube, and fellow generative media designers, Onformative, work with space and time to examine the aesthetic possibilities of their data sets while using the light on dark principle to display their findings. Onformative’s video work, Fragments of RGB (Laub & Kiefer, 2010b), is an interactive LED screen which re-constitutes the video image pixel by pixel to accentuate the RGB fabric of the signal in a simulated 3D space. According to the founders of Onformative, Berlin designers Julia Laub and Cedric Kiefer, by reducing the LED display image to the basic colour processes of RGB and making this an interactive space for the viewer, the normally refined high definition LED image is “destroyed and the RGB elements dissolved to form new, translated images and, thus, a transformed reality. Beside the installation that illustrates the sensitive interaction between person and image, Fragments of RGB is also intended as a photographic series in which the transformations that occurred on the display were consciously photographed, whereby the effect of alienation was intensified in the design process” (Laub & Kiefer, 2010a).

![Onformative's Fragments of RGB](image)

Figure 160 Onformative's Fragments of RGB (Laub & Kiefer, 2010b)

The most explicit rendering of data as a visual form which follows the parameters of the light on dark aesthetic is the iPad application Biophilia (Bjork et al., 2011) released in 2011 to accompany musician Bjork’s album of the same name (see Figure 161). A collaborative project between the artist and a team of programmers, scientists, designers and visual artists Biophilia is literally another
dimension of recorded music. Modelled on a fictitious galaxy, the main navigation screen is an interactive experience sound tracked by one of the album’s key songs, *Cosmogony*. This is a literal expression of the light on dark aesthetic, a delicate and precise affair, movement and resizing is fluid while the tone is dark and at times brooding despite the glossy design principles of the project. Each of the songs is represented within the “galaxy” as a separate application designed and programmed by different teams with continuity provided by the music and the subtext of *Biophilia* – the blending of the human experience with natural systems, earthly, intergalactic or otherwise. Each mini-project seeks to visualise through shape, form and colour the instrumental components and musical expressions of the song. This is a triumph of interdisciplinary creative practice and playfully explores the intersections between technology and culture as so few popular cultural forms have managed. What is important though, in terms of this discussion, is that this is a deep work based on the visualisation of the unseen, of making music visual but also putting the iUser at the centre of the compositional experience – inside the materiality of sound. This is the rendering not of a simulation but an entirely new form of media and an entirely unique techno-cultural narrative.
The influx of devices to “see” and “confirm” the material of reality redefines our understanding of the nature of truth, personal identity and physical wellbeing. The surveillance of the individual, the tracking of information and the penetration of the human form are all inextricably linked to our increasing reliance on a machine-like vision of the world. For medicine and disease studies, this has helped scientists and doctors “see” into the body through radiography and MRI technologies and to sliced and scan the human brain at such resolutions that the individual neural networks of the human mind are visible;\textsuperscript{49} law enforcement officials and private security contractors are employing increasingly advanced facial recognition software tools, networks of CCTV cameras and even social media applications such as Facebook and Instagram to identify track and persecute individuals;\textsuperscript{50} body scanners at airports, schools, concert events and sports stadiums routinely scan, capture and record our physical presence; and there even exists the technology to simulate dreams.\textsuperscript{51} If we have the means to see into the first nanoseconds of the Big Bang we certainly have the means to construct the next one.

/////

This chapter clarifies how simulation and documentation through synthetic visualisation techniques has a broad range of applications in the media arts, astronomy, physics and beyond. Visualising data...

\textsuperscript{49} See the Brain Observatory web page on the experiments conducted on the preserved brain of Henry Gustav Molaison. Also of interest is the direct intervention methodology of the Systems-Based Neurotechnology for Emerging Therapies (SUBNETS) program which is being run by the Defense Advanced Research Projects Agency (DARPA). The clinical trials aim to evaluate the brain in real time with embedded implants in volunteers and patients presenting symptoms of common neurological disease. According to the DARPA announcement, “SUBNETS seeks to move beyond this limited understanding to create new interventions based on new insights that can be gained from the intersection of neuroscience, neurotechnology and clinical therapy” (DARPA, 2013).

\textsuperscript{50} During the UK Riots in 2011 it was widely reported that Scotland Yard and local police forces were using facial recognition software, similar to the technology used by Facebook for their face detection software to identify potential criminals and to search recorded CCTV footage post event. See articles on Gizmodo, CBS News and Huffington Post. In retrospect the relative success of such technologies has been disputed. As recently as November 2013 the United States Intelligence Advanced Research Projects Agency (IARPA) announced a program known as “Janus” which will commence trials in April 2014 to "radically expand the range of conditions under which automated face recognition can establish identity." According to the official announcement (PDF) from the IARPA, Janus "seeks to improve face recognition performance using representations developed from real-world video and images instead of from calibrated and constrained collections. During daily activities, people laugh, smile, frown, yawn and morph their faces into a broad variety of expressions. For each face, these expressions are formed from unique skeletal and musculature features that are similar through one's lifetime. Janus representations will exploit the full morphological dynamics of the face to enable better matching and faster retrieval" (RT News, 2013f).

\textsuperscript{51} “Japanese researchers call it 'decoding' - the process of translating brain scans into pictures.” For more information and a video story see the ABC news website (Sturmer, 2013).
and rendering theoretical simulations into tangible evidence is the new chapter in the techno-cultural narrative. This also re-affirms the usefulness of the light on dark aesthetic to manufacture simulation in visual discourse. However what it also demonstrates is the intangibility of the simulation and that this may provoke a darker reading of what lurks beneath the surface.

The next chapter will explore the high-tech possibilities of camera acquisition and animation techniques in film production and game design. I will demonstrate the link between these constructions and the iconography of war and how these two narratives often intersect to create a sophisticated simulation of reality. I will also seek to demonstrate how this reality is equally influenced by the fiction of game culture and epic cinema creating a confusing blend of storytelling and propaganda. This is reinforced by an exploration of the notion of remix, which when taken both literally and contextually, can be a powerful tool of communication and cultural production.
A composite image made from several infrared snapshots of northern Baltic Sea by NASA’s Landsat 7 on April 19, 2003. “Ethereal swirls of grease ice appear turquoise against the midnight blue of the northern Baltic Sea near the Aland Islands (red) between Finland and Sweden. An early stage of sea-ice formation, grease ice consists of a viscous mix of tiny ice crystals and resembles an oil slick on the ocean’s surface. Wind and currents constantly shape and reshape grease ice into surreal, ghostly patterns..” (Mason & NASA, 2010)
03 :: 03 Digitizing Dystopia

If movies are a reflection of the national psyche — at least as interpreted by Hollywood — we’re all expecting a hideous future.

- Dennis Overbye, writing in the New York Times, Apocalypse and Other Love Stories (Overbye, 2013)

This proliferation of computer technology promises liberation, but, Kroker and Weinstein say, it will actually produce a twisted future. Ruled by what they call "the will to virtuality," we want more and more to upload ourselves into the great Net in the sky, to shed our weak fleshly bodies for the hard perfection of wiring and machinery. They think we want - literally - to become data.

- Mark Kingwell’s review of Arthur Kroker and Michael Weinstein’s Data Trash: the theory of the virtual class (Kingwell, 1996)

As image resolution increases both in the ability to capture and the ability to display the digital moving image, artists are pushing the simulation of the physical world and its fantasy counterpart to ever greater heights of realism. Evidence abounds of the proliferation of exquisitely rendered realities. Bokeh aesthetics, is a recent reality fetish of digital video photography (DSLR) where the subject of the image is cast in an ultra shallow depth of field while the background is mottled in an extremely soft-focus curtain of usually mottled light. Rather than a specific amount of focus blur, the bokeh aesthetic refers to the character of the blur (see Figure 163). The technique of such stylised imagery becomes the message of the film rather than the content itself. A distinctly referential procedure is going on here where the machine becomes part of the subject of the film. Often, as in the example here (see Figure 164), the machine is explicitly represented in a showcase of the feature set of a recently (or soon to be) released camera model. The highly stylised production methodology incorporates techniques such as over-active use of travelling focus, ultra-wide cinematic framing and subtle incremental camera movement. These videos typically blend such production techniques with a strong “cinematic look” irrespective of the banality of the objects variously located in the film maker’s immediate surrounds: the sidewalk, the train station, the
bedroom or as in the case of Florian Cramer’s cited example, by German film maker Pilpop, a grubby Berlin bathroom (Pilpop, 2011). This approach distracts the viewer from the blandness of the subject onto the technical process of the machine. A variation of this technique is also evident in Xavier Chassaing’s *Scintillation* (Chassaing, 2009) a short film made of 35 000 sequential still images, produced under conditions Chassaing calls “classic dogma” cinema, or in a more contemporary context, classic DIY maker philosophy (Saunders, 2009). Cassaing had zero budget, a small DSLR, a laptop, a small projector and a tiny apartment with some heritage era surfaces and textures. The piece, constructed much like a stop motion animation, uses the technical foundations of the bokeh aesthetic to produce what Cramer refers to as “Bokeh Porn”. The obvious technical references here are the seductively blurred background, the extremely narrow depth of field, and the slow precise shifts in focus coupled with motion-controlled camera movements across surfaces and objects. Here the design and texture of the objects become the film’s core novum as they are consumed by the rich
intimate fidelity of the image acquisition process as the lens drifts across wood, plaster and velvet (see Figures 165 & 166). The video piece culminates in a series of sequences in which projection mapping is utilised to accentuate the shape and form of the photographed objects in a vibrant evocation of the light on dark luminescent aesthetic. A strong sense of nostalgic faux naturalism is evidenced in the classical appreciation of colour, in the warmth of incandescent light, the post produced film stock effects and an intimate condensed composition. “Bokeh is part of a revival of analogue aesthetics which can also be seen in iPhone photo applications such as Hipstamatic. It is a living image that has an organic quality to it” (Cramer, 2011). Elsewhere independently made short films reject the camera as acquisition device altogether in favour of the simulation of reality via 3D animation software technology. These artists seek a simulated reality indistinguishable from ‘the real’ in the same way as a Visual Effects Supervisor on a major film production hopes his or her CGI components are indistinguishable from the conventionally photographed scenes and the complementary digital assets of other compositors. Alex Roman’s The Third and the Seventh (Roman, 2009) and Above Everything Else (Roman & The Mushroom Company, 2011), Mathieu Gerard’s Steel Life (Gerard, 2009), Brian Sorenson’s Load (Sorenson, 2013) and Christopher Dull’s Mondblume (Dull, 2010) are all 100% CGI constructions and exemplars of the form. Largely the work of artists working independently or in very small collaborative teams they originate outside the typical studio funded enterprise. Each film maker openly rejects the notion of the camera as a rarefied film making device while simultaneously accentuating the techniques of classic cinematography through their compositional style and over-exaggerated use of various focal techniques and 3D lighting effects. The digital object becomes a highly fetishized image construction. These images exist, not for the communication of meaning or the translation of data, but for their demonstration of the artist’s ability to author digital media simulations which adhere to a desire for such objects to possess “life-like clarity” and “photorealistic” effects. This heightened sense of reality is exemplified in Roman’s The Third and the Seventh, a synthetic construction which adheres to the parameters of the bokeh aesthetic in a 3D animated context. It is also a nostalgia piece. The

52 For more information on the production process for Scintillation see a review at Motionographer, that also includes an interview with Xavier Cassaing. His personal web portfolio also features further explorations in this style especially Just Another Flower which features a far more refined implementation of the luminescent projection mapping aesthetic.

53 See Florian Cramer’s wonderful presentation, Bokeh Porn Poetics at the Institute of Network Cultures, Video Vortex 6.

54 The language which is used in this domain is a mix of post-production terminology relevant to the film and gaming industries as well as the DIY graphic and motion design community online (see PSDTuts+ and Digital Tutors). In saying this, terminology such as “lifelike rendering” and “faithful colour reproduction” are also commonly used by manufacturers of digital cameras and smart phones (see Panasonic’s mini site for the Lumix GX1 mini DSLR).
film assembles signifiers of early-modernist authorship including calligraphy, Polaroid prints, analogue film making ephemera, physical notions of the archive and classical museum architecture, and the careful replication of manual analogue in-camera effects (see Figure 167). This subjectivity and Roman’s animation techniques are an attempt to compose a digital truth using nostalgia as its legitimising characteristic – truth based on a shared analogue history of information retrieval and storage. The film opens in an almost identical fashion to Chassaing’s opening shot in *Scintillation* utilising a very narrow depth of field, but rather than a single close-up attention shifts from the metal nib of a calligraphy pen to a gradual pull-focus onto an ink well in the background (see first image in Figure 167). This shift is used again and again to accentuate detail rather than to provide narrative or visual context. This is a common cinematic device designed to draw the viewer to a specific prop, object or plot point; however in this regime the technique is the basis for the overall animation’s logic and thereby gives the film – and its images – a coherent realism. David O’Reilly, an award winning animator⁵⁵ observes in *Objects* magazine that what makes “these worlds believable, is simply how coherent they are; how all the elements tie together under a set of rules which govern them consistently... Together they create a feedback-loop which reaffirms that what we are looking at is true. The human eye wants this aesthetic harmony” (O’Reilly, 2009). Roman evokes a strong nostalgic feel as the camera technology which provides cue points for the optical properties of some of the imagery actually appears throughout the film. And still the shift in focus, the

---

⁵⁵ O’Reilly won the Golden Bear at the 2009 Berlinale for his short film, *Please Say Something*. His [website](http://www.davidoreilly.com) is also a fountain of riches.
subtle camera moves persist as the film takes on mystical properties – exploring fictional concert halls, libraries and museum spaces adorned with rich textiles, walls of books, picture frames and decorative glass and marble surfaces. It is a nostalgic reading of the modern to the same degree that Mathieu Gerard’s *Steel Life* is a completely millennial construction of the aesthetics of the technocultural narrative. Gerard’s film is an allegory for the act of animating the inanimate – or perhaps more explicitly, the confluence of nature and machine. Images of liquid metal, of dreamy undulating waves, of perfectly formed machine parts, of electric blue energy giving life to thin spindly amoeba like tendrils of steel as motion, texture and light synergise in the artist’s command of the form. From above, in a gothic glimpse of the end times, a fiery otherworldly object descends upon a fictional cityscape not unlike New York and from below a liquid mercury-like substance is drawn magnetically upwards, a splash of the liquid electric, the unfurling of a steel flower all of which appear to signal a galactic rebirth. This is the gothic-high tech sublime of new media arts production: the natural world recast by a highly refined dark metal aesthetic. The practice brings into question the origin – the essence – of the cybernetic dream by fetishising the properties of its construction while replicating the often repeated euphoria of the never-ending end-times with images of collapsing galaxies, collapsing cities and falling skies (see Figure 168). While *The Third and the Seventh* and *Steel Life* may lack a conventional narrative, it taps into the deeper anxiety and sense of loss that pervades the network by questioning its architecture and articulating our uncertainty for the world via the aesthetics of a hyper real simulation.
These films, whether via DSLR imagery or 3D animation, are not only exemplars of the bokeh form but, more explicitly, evidence of a strict control of technique that coheres in a quest to demonstrate truth through the simulation of the real. It is the coherence of aesthetics and the repetition of technique that is indicative of a much broader techno-cultural narrative construct in the millennial period. We can see this across all art forms, not just DIY film and animation, but also major pop cultural spaces such as video gaming, music video clips, advertising, television program packaging and feature film production. The desire to emphasise the clarity of the 3D animated image in the telling of a story, the promotion of a product or the design of new worlds is also heavily contextualised with the framing of these digital objects. In the context of video games, notions of truth and realism are important if the game player is to accept the conceit of the virtual experience. There is also a wider technological theme embedded in gaming which fetishizes the specifications of PC gaming rigs: the physical appearance of the machine, the language and iconography of component manufacturers, the design of the internal components themselves, and the discourse of the myriad of websites which perform benchmarking tests and then debate the
resulting statistics with parochial venom. These are all cultural markers of an industry which demands that the coherence of its simulated logic operates on both sides of the screen. The twin parables of the millennial age – a networked machine reality and a science fiction virtuality – socialised by our intimate relations with our devices - is played out in this space where Hollywood dreaming meets personal technological suprematism.

Machine Games is a new German Swedish game design start-up which has resurrected the classic first person shooter (FPS) title, *Wolfenstein*. The first promo clip for their new version of the game, *Wolfenstein: The New Order* mimics the bokeh aesthetic styling of *The Bathroom* and *Scintillation* but in this instance the fetishized objects are far more sinister icons of the early Futurist aesthetic. These objects, observed in intimate focus, are the machine heads of industrial tools as they exactingly carve out the “W” logo of the game’s namesake. However, in the refracted light from an unseen source we see the ghostly image of the Eiffel Tower reflected across the steel polished surface and then crippled by a telling blow, as the foreboding voiceover intones: “They set the world on fire. But it wasn’t a war anymore - it was a remaking.” (Machine Games & Bethesda, 2013). And then, in a brief dip to black amid a flurry of sparks and molten iron, we realise that we are in fact witnessing the construction of a Nazi robot armada. All hell will no doubt break loose from these HAL-esque red-eyed mecha as we glimpse upon the cold black steel of their hulking frames the reflections of a fiery apocalyptic future - images of a burning Statue of Liberty and a crumbling Empire State building. The subtext is obvious: *the Virtual Fascist Third Reich borg army is at the gates, and you commander, you had best be ready!* (see Figure 169). A similar tactic is used in a series of promotional spots for Electronic Arts and Dice Games’ *Battlefield 4* in which we see the inner cogs and shafts of a heavy, foreboding machine – shallow focus, macro lens, a greasy machine oil intimacy – only broken when we pull out to reveal the game series’ now familiar instruments of war: the helicopter, the battle tank and the submarine (see Figure 170). But what is most surprising is that in each clip this imagery quickly dissolves to reveal an explicit bokeh reference as the backdrop to the title graphic shimmers with the glittering mottled orbs of some distant out of focus light source (see bottom image in Figure 170). Is this what the battle space looks like in the new millennia? Is this the new real? Will the future of armed conflict remain safely cloistered away on the other side of the screen, sweetly out of focus like Christmas lights in the shopfront window across the street?

---

56 This is also true of the gaming console realm, although to a lesser extent in terms of the machines themselves which remain essentially unchanged through a 5-8 year product life-cycle. Additionally, their internal components are for the most part proprietary and do not permit upgrades or much by the way of variation. However recent launch announcements for both the new *Playsation 4* and the *Xbox One* do present fascinating case studies of how manufacturers frame notions of the real.
In March 2011 Kaos Studios released *Homefront*, the central premise of which is that North Korea has managed to occupy large parts of the American continent including its major cities through an alliance with South Korea and Japan. Tightly edited combinations of historical news footage, kinetic typography, bespoke video sequences and fictionalised versions of iconic landmarks are utilised to set up the game’s premise. Similar material is used in the construction of the promotional video spots for the game pitching to potential defenders of the homeland with the slogan, “Home is where the war is” (Kaos Studios & THQ Inc, 2010). In one particular video, *The World of Homefront*, the game’s publisher THQ Inc. promotes the game’s narrative premise as something that *could* be real, that the game experience is a plausible rendition of the geo-political conditions in the real world.\(^{57}\) Interviews are conducted with the artists, animators and engineers of the game in faux 60 Minutes-styled set pieces, using now familiar “guerrilla journalism” tropes – distressed vision from hand held cameras, the erratic change of focus, the crackle of video interference, the buzz of the analogue – all in an effort to heighten the sense of the real for a product.

\(^{57}\) There was much controversy and online furore around the promotion and eventual release of *Homefront* in 2011 as its marketing campaign began amidst the crisis of the sinking of the Korean naval vessel ROKS Cheonan in March 2010 and the exchange of missile fire on the Korean Peninsular in November of that year. For more background on the media scrutiny of *Homefront* and the response from Kaos Studios see Christian Gaca’s interview with former CIA Operative and Kaos employee Tae Kim at *Gamereactor* (Gaca, 2010).
that is essentially a fantasy. The *Homefront* promo video is a sophisticated textual mix of paranoia, conspiracy theory and dystopian fiction.\(^{58}\) The video opens with stock footage from an actual press conference involving then US Secretary of State Hilary Clinton in Tokyo on May 20 2010 where she announces that the sinking of the South Korean war ship, ROKS Cheonan, in the Japan Sea in March of 2010 was the work of a North Korean midget submarine.\(^{59}\) The video then describes a future power shift in global politics as the North Koreans gather enormous technological power by joining in an unlikely federation with the South and eventually Japan thereby creating the “North Korean Federation”. Conversely the United States teeters on the edge of economic collapse. Tae Kim, Kaos Studio’s “CIA Story Consultant” appears explaining how “historically, there are multiple examples of the sudden rise and fall of mighty empires – Ancient Greece, Mongolia and Japan”. The video then poses the question: “Is the United States the next great power to fall?” (Kaos Studios & THQ Inc, 2010).

David Votypka
(Creative Director)
It’s the decline of the USA due to internal factors and the global geopolitical situation. And there’s a war in the Middle East; Saudi Arabia and Iran are involved and that disrupts oil supplies.

Zach Wilson
(Sr. Level Designer)
The United States great weakness is its “just in time economy”. Your local supermarket has three days’ worth of stocks on the shelves. If something gets in the way and disrupts

\(^{58}\) This intertextual narrative approach is similar to EA Games’ positioning of its *Command & Conquer: Generals* series (EA Pacific, 2003) which involved “allied forces” routing a rogue terrorist faction, “The Global Liberation Army” in a near-future Middle East (see Figure 173). The game was released on February 11 2003 only weeks before the invasion of Iraq by American and coalition forces and in a similar narrative construct to these unfolding events its release featured video inserts of “embedded journalists”, units of “suicide bombers” and “chemical trucks” and options to deploy “low grade nuclear weapons”. *Generals* was the fantasy of reality delivered by a highly stylised yet coherently formed 3D simulation and operated in an intertextual meta-verse in which the drums of war were being beaten by a complicit media on a heightened war footing following the events of 9/11. The promotion and ambiguous construction of the television series *Homefront* follows a similar pattern, the opening title sequence is worth comparing.

\(^{59}\) For more information on the actual incident see the archive of the BBC Asia-Pacific news service’s analysis of the independent report.
that – that’s it for our country. Our country is on the razor’s edge!

The video then spends some time describing the emergence of the “North Korean Federation” and how their technological supremacy is established. The screen is divided into segments showing protestors and riot police on the streets of London, the burning of effigies and rallies outside mosques in the Middle East, stock footage of Condoleezza Rice at a Saudi diplomatic press conference, the tumble of the Times Square stock market ticker, the rationing of food and water, and a peculiar POV shot from a frantic shopping trolley scurrying mindlessly through a supermarket. We are then confronted with various apocalyptic images of burning sunsets casting their ominous orange glow across traffic jams, oil rigs and nuclear power stations. An odd hokum mix of mediated realities concocted to support the foreboding sense of dread and semi-plausible present-future reality that the interviewees are so committed to constructing:

Tae Kim
(CIA Story Consultant)
North Korea is able to invade the United States through its well prepared military strikes that involves an EMP strike.

Zach Wilson
(Sr. Level Designer)
EMP is an electromagnetic pulse, it sends out a particular type of energy that blankets the
earth and what that does is it deactivates modern electronics ...

SCREEN fades to black, SOUND of computer BLEEP and then SILENCE. CUE soulful theme MUSIC.

David Votypka  
(Creative Director)  
You see things that aren’t supposed to be happening. This little town main street and it’s got Ma and Pa shops, and bakeries and banks but there’s soldiers and there’s barbed wire. And that is the genesis of where this phrase – “the familiar becomes alien” – comes from.

Voiceover Montage  
We want to show America – but twisted / War in the back suburbs, war in the elementary school playgrounds / baseball fields, high schools / Golden Gate Bridge becomes a battle field – that’s pretty darn alien if you ask me.

Zach Wilson  
(Sr. Level Designer)  
It takes seeing an enemy hurting innocent people in front of you to make you understand why you are doing the things that you are doing.

CUT TO over the shoulder POV of soldier executing civilians face down in a mass grave.

David Votypka  
(Creative Director)  
This is your backyard, this is literally the home front.

The development of Homefront, between 2008 and 2011, was a slow and problematic affair as Kaos
Studios went through two key management restructures while the designers – ex-game modders from Battlefield 1942 - struggled to deliver their vision of this “twist on reality” beneath the autocratic umbrella of game publisher THQ Inc.\(^6\) However *Homefront* went on to sell 2.6 million units across three platforms (PC, Xbox and Playstation) and debuted in both the UK and the US at number one on the gaming sales charts (Thorsen, 2011). The viral marketing campaign which began with the suite of video trailers and the *World of Homefront* video exposed in early 2010 culminated with a transmedia campaign that included a novel based on the game’s premise, *Homefront: The Voice of Freedom* (Milius & Benson, 2011) written by film director John Milius and the author of the “adult Bond” novels Raymond Benson and a soundtrack of heavy metal bands covering songs by U2, Deep Purple, Metallica and Credence Clearwater Revival entitled *Homefront: Songs For the Resistance* (Harwood & Various Artists, 2011). The game’s architecture\(^6\) has been acclaimed by participants for the sense of realism that the rendering of an occupied America evokes when one is fully engaged in the game’s virtual environments, the wider meta-verse feeds the desired reality of the transmedia spectacle. It then becomes possible, to finally be subsumed into this convincing dystopian mash-up of historical events, speculative fiction, 3D animation and recycled media samples. Surely the iconography and propaganda material broadcast by

\(^6\) Despite the relative success of *Homefront*, Kaos Studios would not produce another game and their publisher THQ would eventually fold in 2012. For more information on *Homefront*’s troubled development see Rob Zacny’s account, *Death March: The Long, Tortured Journey of Homefront* at Polygon (Zacny, 2012).

\(^6\) For an indexed reference list of game reviews for *Homefront* see the index at Game Rankings.
the real North Korean regime and the recorded, preserved and re-distributed imagery of the United States more controversial missteps in the War On Terror play to this as well (see Figures 174-176). The recent propaganda film that emerged from North Korea published on the Uriminzokkiri YouTube channel on February 5 2013 is a boldly aggressive and sometimes sentimental construction equal to anything going on in the Homefront universe. The short film depicts a young North Korean boy, asleep next to his video camera which is sprinkled with a flourish of Disney-esque magic dust, as he dreams of North Korea’s overseas conquests against the “oppressors” (Uriminzokkiri, 2013). Through the lens of camera we see a burning American flag, a nuclear strike on New York City and the conquest of space by North Korean ballistic missiles. The destruction of New York city is lifted from sampled footage from the Activision game Call of Duty: Modern Warfare 3 and is accompanied by the text: “Somewhere in the United States, black clouds of smoke are billowing. It seems that the nest of wickedness is ablaze with the fire started by itself” (Phillips, 2013). The film features a Space Shuttle-type craft which zips back and forth across the screen as we see images of smiling North Korean women, a triumphant “reunited” Korea and a serene sunset illuminates – post America - planet earth. All of which is accompanied by a karaoke lounge style rendition of the Live Aid theme from 1985, We Are the World (see Figure 177). But what makes this so compelling as gothic high-tech assemblage is that the producers have used video game aesthetics and broadcast media production techniques coupled with a particularly cringe worthy brand of music accompaniment to communicate a nation state’s threat of nuclear annihilation upon another nation state on a public YouTube channel.
The *Homefront* meta-verse, the United States’ language of the War on Terror and the ongoing propaganda exercises by North Korea are complex textual constructions comprised of fragments of digital objects which evoke reality and fantasy in equal measure. This collective intertextual cultural construction articulates an agenda across a variety of media technologies and a variety of cultural mediums, as Evan Calder Williams observes:

These films, these books, mass cultural phenomena and subcultural obsessions, are the closest articulation we can get of the structures of totality underpinning this. Not a mirror but a busy prism. In the distortions of this restless cognitive mapping, we get closer to not just the texture of an age, but the support structure on which it is stretched and formed (E. C. Williams, 2011, p. 157).

One of the defining properties of network culture is the emergence of the remix as a method of rapidly distilling archived material in a new context. An often jarring but contextually provocative re-animation of the database is possible when remix techniques are employed to re-order linear time based media. Yet when this approach is taken to an aesthetic and conceptual level the methodology of the remix can be applied to a range of media styles and design strategies. Databases, image banks, design templates, lighting plans and content archives can be repurposed to tell new stories. History and existing fictions can be adapted, manipulated and reused to persuasive effect. This is evident in the corporate narratives of Microsoft’s *Future Vision*, the *Life Companion* marketing strategy for the Samsung Galaxy S4 and entertainment fantasies of *Star Wars, Command & Conquer* and *Homefront*. Large media conglomerates with multiple arms of media production and publishing are the remix houses of the future, companies such as News LTD, Sony, Time Warner and even government funded entities such as the BBC are essentially massive archives of

![Figure 177](Image) Still frames from the North Korean propaganda film from February 2013 (*Uriminzokkiri*, 2013)
potential remix material. With considerable databases of footage and commentary they are placed
at the very forefront of a sophisticated new world of network remixing – and rerouting – of content.
This is millennial technoculture’s brave new world: reality and fantasy remixed as pervasive digital
objects, folding back on history and opening up old content into new image loops of revenue.

My video installation, *Vonnegut’s Fire Fight Fuzz Box* (Goodwin, 2011f), was the result of a media
survey of imagery collected primarily between 2001 and 2011. [The two exceptions being *The Day
the Earth Stood Still* (Wise, 1951) and a recently discovered 1903 print of *Alice In Wonderland*
(Hepworth, 1903)]. These digital objects were grafted from the web as YouTube clips, torrent
streams and extracted from the commercial DVDs of games and films. The assemblage featured a
Kurt Vonnegut YouTube clip entitled “The Shape of Stories”, a video thesis on storytelling from 2005
which forms the structural backbone of the assemblage and the allegorical link between Alice’s
disappearance down the rabbit hole in *Alice in Wonderland* and George Bush’s quest to pursue
Osama Bin Laden down the rabbit hole of Tora Bora in Afghanistan (Vonnegut, 2005).62 The
accompanying samples were assembled in reaction to – and in concert with – the political and

62 For a full transcript of Vonnegut’s 2005 lecture see “Kurt Vonnegut at the Blackboard” at Lapham’s Quarterly
website. The original video extract can be found here.
economic mediated remix which has reverberated down the echo chamber since 9/11 – the original technological “accident”. The governing aesthetic here is the search for a sense of what is real from the din of fabricated realities and recontextualised cultural snapshots. The primacy and ubiquity of the moment as document have heightened the power of 9/11 as permanence, as the all pervasive visual icon of our time; often repeated (but seldom in real time) the greasy wheel for the slippages of time between past-present-future. What other examples from history could have been given the same immortality with the presence of so many image recording devices? As Paul Virilio observes:

Overexposure is the live broadcast, it is real-time replacing the past, present and future. A society that heedlessly privileges the present necessarily privileges the accident... So somewhere the end of the future and the end of the past, in our societies of immediacy, of ubiquity, of instantaneity, are necessarily the advent of the accident (Virilio, 1994, p. 109).

Kurt Vonnegut’s erudite expose on storytelling technique becomes this space of overwhelming immediacy and multi-layered image loops. Using his lecture to sweep up the ominous signs of the millennial rush towards never-ending conflict, the remix is domesticated by its size, its child-like installation design and the intermittent flashes of analogue screen noise. These images are not specific to the remix, they are everywhere: they are on the TV screen on the diner counter at a truck stop in New Mexico, above the dart board just along the wall from the cigarette machine in a dive bar in Boston, in the sand-whipped desert of the real on the outskirts of Kabul, in the Bluetooth Razor mouse of a suburban gaming rig in Parramatta, and in the image banks of the 24 hour news room in Hong Kong. The iconic image loops which form the database for Vonnegut’s Fire Fight Fuzz Box are replayed again and again and again. This is a remix that reflects the macro accidents of popular culture’s more lurid offerings, like Homefront and North Korean propaganda, and tosses them up into a supremely gothic high-tech slipstream: Osama Bin Laden flipping through his hard drive of pre-recorded television programs / the Zeppelins of the Imperial Chinese forces descending on New York in Command & Conquer: Generals / the commander of the special forces tapping out the route to a hidden terrorist cell in Battlefield 2 / the Wikileaks video of a US Apache Attack helicopter gunning down civilians in Iraq / the soldiers from The Night That The Earth Stood Still armed with rifles and braced with tanks and armoured vehicles backing away in fear as we cut to the ghastly lurid visage of a gyrating 5 year old Eden Wood, aka Cutie Patootie / and finally, like a rabbit caught in the headlights, the expression on George Bush’s face as he reads a picture book to a classroom of children on the morning of September 11 (see Figure 179).
The recently emergent form, the supercut, is an extension to the remix and the mash-up method in which large amounts of video content are collected on a particular theme or specific visual or audio motif and assembled in one continuous stream of video. There are numerous examples of the supercut on the web, however few if any are as ambitious and technically accomplished as Christian Marclay’s *The Clock* (Marclay, 2010). Winner of the Golden Lion at the Venice Biennale in 2011, *The Clock* is the most celebrated supercut, a 24 hour film featuring image sequences from feature films dating back seventy years that involve a watch, clock or some other time keeping device. These “fragments” are assembled in sequence with the time depicted on the screen matching the time of day where *The Clock* is being screened. While Marclay’s is a strictly linear construction, video artist Jeff Desom uses the video frame to create a real time video tableau across the channels of video. Desom assembled a masterful 20 minute large scale reconstruction of Jimmy Stewart’s character L.B. Jeffries’ point of view from *Rear Window* in the composite remix *Rear Window Loop* (Desom, 2010). The image sequences lifted from the film depict the various goings on in the courtyard and apartment buildings across from Jeffries’ own apartment these are then assembled seamlessly into a
vast single 2400x550px video image. This of course removes much of the film’s subtext of mystery and paranoia, rather the film becomes an observation of inner urban life. The shift in focus, the change in lighting and the subtle movements of the supporting cast create a powerful ensemble performance. Desom uses motion control effects and subtle image blending and colour correction tools to manage the variations in perspective and the gradual shifts in light and environmental conditions. More in keeping with the user generated tradition of the web supercut, Kevin B. Lee’s *The Spielberg Face* (K. B. Lee, 2011), is an elegant and profound reversal of the gaze in contemporary cinema. Spielberg, who can control an audience through his direction of performance rather than the set pieces his more bombastic films are renowned for, uses the human face at the most crucial of moments rather than focusing explicitly on the action itself. As Matt Patches from *Ugo* observes: “When a character looks up and catches something unexpected, that’s the face. When a character watches something otherworldly take place in front of their eyes, that’s the face. When a character stares outward, mouth slightly agape and has a revelation that will change them forever, that’s the face” (Patches, 2011). The Spielberg face first emerged fully formed in *Close Encounters of the Third Kind* (Spielberg, 1977) in which Spielberg very rarely showed the aliens or the space craft of the film’s title, instead exploiting the performances of his cast. Lees observes in the narration to his video essay, “this is about Spielberg discovering the full power of the face,” and exploring “the perpetual wonder of seeing things new” (Haglund, 2011). This is also cinema as metaphor for the dark euphoric moment - the gasp before the crush of gravity, the ecstasy

---

63 There is a 3 minute “making” of sequence on Desom’s [website](http://example.com) which won the Vimeo Remix award in 2012. The full version of the *Rear Window Loop* is a three channel work which requires a three projector setup. This version was screened at the Sydney Film Festival in June 2013.
before the fall, the lurch for the past as the future disappears: “eyes open staring in wordless wonder in a moment where time stands still” (K. B. Lee, 2011).

The centrepiece for my exhibition Dark Euphoria: Unclassified Media was a video assemblage – or essay film - My Endless Dystopian Summer Blockbuster (Goodwin, 2011d). Structured in three separate acts, the film contains both supercut and video tableau aesthetics. Adopting the “Spielberg face” motif, the assemblage’s framing device is the dramatic cinematic close-up. The briefest of instances when a human context is placed at the centre of an impending catastrophe, the close-up is cinema’s link between the screen and audience member. The film explores the nature of techno-futurist tendencies in dystopian / post-apocalyptic millennial cinema by juxtaposing the depiction of imminent technological disaster against the intimacy of the human expression of fear and anxiety.

There is certainly darkness here in the various climactic scenes of destruction, but also a very real mistrust – and an almost disbelief – in technological progress. The content of My Endless Dystopian Summer Blockbuster is sampled from over 70 films across two genres of feature film production: apocalyptic cinema (impending, post and ongoing) and the cinema of paranoia (in which fear and trepidation is built around the use of technology, primarily the computer and the internet). In both genres there exists the fear of the unknown or the unseen. The protagonist’s motivations and physical form are only revealed when it is invariably too late. The main themes are familiar cataclysmic tropes – threats of nuclear annihilation, resource depletion, financial collapse, alien invasion (both species and inter-planetary object), viral contagion (often of ancient and mysterious origin) and perhaps the two strongest anxieties of the contemporary era – climate collapse and the walking dead. The technological paranoia of computer technology also has its distinct forms – software code (either as evil virtual entity, virus or proprietary malfunction), artificial intelligence (networked system, robot or avatar) and notions of the internet and the

64 A period I have mapped from John Carpenter’s Escape From New York (Carpenter, 1981) as being the first modern post-apocalyptic / post-society film which evokes the outlaw and frontier tropes of the dark wasteland, up to the Hughes Brothers’ similarly anarchist post-apocalyptic tale, The Book of Eli (A. Hughes & Hughes, 2010). These are rough-edged dystopian narratives and bare some connection in their themes and art direction but also are evocative of the times in which they were produced which are distinctly late millennial. Of course earlier examples do exist but would otherwise distort the time frame. These films include the Planet of the Apes (Schaffner, 1968), Farenheit 451 (Truffaut, 1966) and Logan’s Run (M. Anderson, 1976) which definitely echo the anxiety of the techno-futurist narrative but are more focused on the immediate threat of the Cold War and environmental destruction. The exception from this period of course would be Godard’s Alphaville (Godard, 1965) Kubrick’s 2001: A Space Odyssey (Kubrick, 1968) and George Lucas’ THX 1138 (Lucas, 1971) each of which have narratives which play directly to the anxieties surrounding technology and society and it is for this reason that although they are outside of the parameters of my media survey sample nonetheless still appear in My Endless Dystopian Summer Blockbuster.

65 During this period the only exceptions to this are Deep Impact (Leder, 1988) and Armageddon (Bay, 1998) which play to the external threat of a rogue asteroid and have little do with the earthly challenges proposed by their contemporaries. Both however do provide explicit renderings of the end times and, perhaps due to the very nature of that cataclysm, the most dramatic of CGI visualisations.
network (global nefarious organism, viral carrier, anti-western menace, the playground of hackers and terrorists, panopticon). *My Endless Dystopian Summer Blockbuster* by the way of an assemblage of these themes delivers a meta-narrative composition of the end times as orchestrated by the devices and the network technology that links them all together.

The aim of this assemblage and the logic of the parameters for the sampled films is to emphasise the use of data visualization, high-end digital animation and compositing - machine vision. Just as Vonnegut’s *Firefight Fuzzbox* delivers a mash-up critique of the war machine, mainstream TV image constructs and game design, *My Endless Dystopian Summer Blockbuster* is a reflection on the darker anxieties in millennial society about end of world scenarios and of global technological malfunction. The assemblage is presented in three acts which are divided by both structure and content:

<table>
<thead>
<tr>
<th>Act</th>
<th>Split Screens</th>
<th>Media Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Act I</td>
<td>25</td>
<td>Netploitation cinema samples (keyboards, mouse clicks, various peripherals, screen glow, lines of code, etc);</td>
</tr>
<tr>
<td>Act II</td>
<td>4</td>
<td>Data visualisations, instrumentation and new media reports depicting the parameters of a catastrophe (screens within screens);</td>
</tr>
<tr>
<td>Act III</td>
<td>1</td>
<td>Horrified characters looking off screen in disbelief, often at screens depicting catastrophic data or news reporting.</td>
</tr>
</tbody>
</table>

Table 1 *My Endless Dystopian Summer Blockbuster* split screen structure. How this was implemented in the gallery space can be seen in the exhibition documentation here.

There in fact two versions of this structure, a different version for each end of the gallery space, with Act II and III containing similarly themed but different content. The intention being, that when projected to the full size of the gallery wall the close-ups of the characters in Act III would appear to be looking directly at each other across the gallery space in silent horror. The use of the screen and all its variants as narrative device in the design and the delivery of the gothic high-tech apocalypse is what *My Endless Dystopian Summer Blockbuster* seeks to emphasise by using the parameter of the
screen as a linking device. Given what we have explored so far in this text and what will follow in the coming chapters, it is important to note how these visual devices are not only used in this context but the similarity of the design and implementation of such devices by corporations and government organisations to communicate their agenda.

At the centre of this is the ubiquitous screen which, as Paul Virilio has noted, has become the primary site for “temporal compression” – an always-on accelerated reality in which flesh becomes a complicit component of the media interface, operating alongside and through the black mirror of its facade: “the carnal centre of presence extends to the telepresence in the real-time world delivered by the instantaneity of a ubiquity that has now gone global” (Virilio, 2007, p. 20). We have become the phantom limb of the great technological fantasy of the image loop while our minds are buffering packets of data and frames of video before the next leap into the image stream comes online. The message is clear: in the end the system wins via our dutiful submission. There is a “political economic relationship” between the digital object and the economy it serves, as Vincent Mosco writes in The Digital Sublime, this

Figure 183 A.I Artificial Intelligence (Spielberg, 2001b)

Figure 184 Deep Impact (Leder, 1988)

Figure 185 The Day After Tomorrow (Roland Emmerich, 2004)

Figure 186 Cloverfield (Abrams, 2008)

Figure 187 Wolfenstein: New Order (Machine Games & Bethesda, 2013)
relationship formulated “the bridge between the culture and the political economy of cyberspace. These two processes provided the foundation for the technological sublime that grew out of the ‘magic places’ like Silicon Valley and Silicon Alley and the grounding for the belief that we are entering the end of history, geography and politics” (Mosco, 2004, p. 154). This ending – as simulation – is the preserve of millennial technoculture, it is relentlessly present but not immediately available for scrutiny and the cinematic image has become the link between a digitised truth of that presence and our interpretation of what that truth might require. The question would have to be asked then, would the reality of the catastrophic moment – THE END – be rendered as a scene more real than real? As in a car accident, would we be controlled by time or would we see the horror in enough detail to shield our eyes from the shards of glass and steel? As our telepresent realities accelerate, will the end be delivered via ever higher and higher grades of image acquisition and transmission? This is the “over exposure” of the present reality, this is the repetition of highly evolved animations of the end times, this is the site where these techno-cultural fantasies gather – on the network, in the remix, fragmented, duplicated and homogenised as optical megascopy. The screen has evolved to become the interface for the guided missile, the machine gun pilot, the infrared telescope, the bar code reader, the 3D printer and the news camera. But it is also the author of darkness – the delivery device of diabolical statistics, the radar scope for plotting asteroids and earthly disasters, the graph of impending financial doom, the CCTV footage of rape, murder and the grainy black and white drudgery of everyday life. Therefore in this construction of My Endless Dystopian Summer Blockbuster, the screen delivers the tension between the impending apocalyptic moment (or technological accident) and the widescreen fantasy of its occurrence. Somewhere amidst all of this is the audience – the audience who exists in a similar passage of space and time yet whose endless dystopic moment makes the fantasy of the end of the world a thing of mass appeal. Meanwhile the tragedy of life moves on and the prophecy of scientists – the mega-end times – is an ever-present background hum, a softly spoken promise of distant horrors, a slightly uncomfortable lump in the back of one’s throat.

Evan Calder Williams echoes Mosco’s observations that this trend speaks to deeper concerns of not only human relationships but to political systems and economic structures. Often such dystopian films commence with the central protagonists adrift amidst the post-apocalyptic moment and end as they experience a process of hopeless dehumanisation via seemingly irrational moments of savagery and anarchy in order to survive or, as mostly is the case, ultimately perish. As if the very act of societal collapse demands that we return to a more unstructured, immoral and anarchic age closer to our beastly ancestry, negating our recent technological and philosophical sophistication which facilitated the collapse in the first place.
We face a globe in which whole portions are designated obsolete, forcibly shuffled off the world historical stage. A world in which sections are designated not of this world. None of this is accidental, and we can’t afford to buy that. We’re out of time, running up against infinite limits of resource and profit, while we are equally stuck in histories that don’t belong. The point is never to apologise or accept, neither to reconcile nor to compromise, only to take up whatever obstacles we can find and sharpen their edges. For the world isn’t flat, despite what capitalism and its apologists like to tell themselves and us. It never has been. It never worked that way, always depended on the casting to the deep whole populations and spaces of life. We inherit and occupy the material sites of this casting off: it cannot be otherwise. The first step towards our launching differently, both from this point in history and in casting off the weight of a monstrous world order, is to take fully on the burden of an apocalyptic world and structure of history (E. C. Williams, 2011, p. 238).

In a similar vein to Slavoj Žižek’s essay Desert of the Real, written in the aftermath of 9/11, the dystopian films of My Endless Dystopian Summer Blockbuster articulate an exaggerated simulation of the very real apocalypse which is happening all around us – nuclear weapons are real, climate change is real, avian flu is real, corrupt political systems are real, the robotic war machine is real, the reorganisation of global financial markets (aka the end of growth) is real, but as Žižek and Wikileaks attest, the predominant ideological status quo is a falsehood. As Žižek noted, and also to some extent Saskia Sassen, America and the West is willing into reality the fatalistic fantasy of a totalising destruction. September 11, it would seem, is the new template, “The shattering impact of the bombings can only be accounted for against the background of the borderline which today separates

![Figure 188](https://example.com/figure188.jpg) Still frame from video channel one of My Endless Dystopian Summer Blockbuster (Goodwin, 2011d)
the digitalized First World from the Third World "desert of the Real." It is the awareness that we live in an insulated artificial universe which generates the notion that some ominous agent is threatening us all the time with total destruction” (Žižek, 2001). And it isn’t this the ultimate diversionary tactic? The very thing under threat is the system that the ideological construct seeks to preserve. What the apocalyptic vein of “worst case scenario” cinema and television articulates is a hyper-real-visualisation of reality as not only mass entertainment but also as memory with substance – and perhaps most provocatively a bleak virtual future based on a very real and very recent historical trauma - a simulacra of the end times.

Virtual Reality simply generalizes this procedure of offering a product deprived of its substance: it provides reality itself deprived of its substance, of the hard resistant kernel of the Real – just as decaffeinated coffee smells and tastes like real coffee without being real coffee, Virtual Reality is experienced as reality without being so. What happens at the end of this process of visualization, however, is that we begin to experience ‘real reality’ itself as a virtual entity. For the great majority of the public, the WTC explosions were events on the TV screen, and when we watched the oft-repeated shot of the frightened people running towards the camera ahead of the giant cloud of dust from the collapsing tower, was not the framing of the shot itself reminiscent of spectacular shots in catastrophe movies, a special effect which outdid all others, since – as Jeremy Bentham knew – reality is the best appearance of itself? (Žižek, 2001)

The ‘triumph of the real’ is the power of certain realities – verified statistics, understood truths, hard lessons, exponential growth of evidence – to go beyond the powers of dogma, conspiracy, partisan political rhetoric, to foment a deeper anxiety within the contemporary gothic temperament. However, the representation of the real via a simulation perhaps represents the true power in this dialogue as words and statistics are foregone for familiar dramatic visual reconstructions. Whether that be via animated graphics, charts and graphs in the media, high resolution photo media constructions, digital illustrations/interpretations/composited data of the unseen or large scale SFX sequences in fictitious narratives (see Figure 189). These serve two opposing functions – awe at the creative and technical abilities of the producers of such content but also a slight unease with regards to the “realities” that such visualisations are actually communicating. Heightened visualisation via digital media is then both aesthetically pleasurable and subjectively quite horrifying. In the broader context of the media these realities only exist as digital representations via screens and in the shared anxiety of what such information represents. If you look for them many are playing out right now on many levels - top order anxieties about the nature of existence namely death and the finiteness of the human presence in the universe; societal anxieties about the fragile social compact of western democracy, lapses in social order, the collapse of a relationship; anxieties about invisible organisms

190
and viral infections; existential anxieties about identity, sexuality and fate; and the big picture trauma of the groaning earth, the falling stars, the rising seas and the angry skies. In setting up the near-future, background atmosphere of the twenty-teens Bruce Sterling gave credence to such anxieties by dourly stating: “The actual objective situation looks more like this: No money, scarcity, financial collapse, collapsed states, general precarity, an energy crisis, low intensity global warfare, and a rapidly advancing climate crisis... That’s what the next decade actually looks like. And you’re going to live there... We’re not going to go back to the year 1950. The clock is ticking, the pages are going to fall off the calendar. In a decade it’s going to be 2019, we’ll be ten years older, you’ll be ten years older, these are all solid things” (Sterling, 2009).

Popular culture then becomes a mechanism to represent and highlight these anxieties through data visualisations, infographics, 3D animations, big data sets and set-piece special effects in epic cinema constructions. We see with the machine and it sees us. The most fantastic elements of this vision feed an apprehension about what the reality of the future might be. The simultaneity of a techno-futurist promise and its inverse reality drives the narrative of simulated apocalypse into dangerous self-destructive territory. The experience of being exposed to the repeating fantasy of the apocalypse accumulates the qualities of a dark gothic assemblage. It becomes real, it becomes permanent. It becomes a secret desire in the darkest corners of our cinematic dreaming. Do we in fact yearn for the ultimate cinema of the techno-futurist dreamscape: 9/11 2.0? Does this yearning have a nostalgic sub text, a retro-filtered desire for a more transparent mechanical aesthetic? Or are such Steampunk fantasies just a big bold wish for the mechanical era of Fritz Kahn’s illustrated universe in which pulleys and levers and cogs are the technologies which operate the weapons of

![Figure 189 My Endless Dystopian Summer Blockbuster (Goodwin, 2011d)](image-url)
war and global conflict? Do we desire a cinematically more visible conflict coated in oxide, dripping with sepia tones & viewed through the algorithm of a Hipstamatic filter from a time that pre-dates the invisibility of network technology in which the clean clinical algorithms of computer code, the silence of the drone strike and the stealth of the virtual warrior makes war seem entirely unreal? Does the 21st Century dream of the horrors of the past when armed conflict was big picture stuff, with vast potholed landscapes of rumbling tanks and limping infantry, where statistics accumulated in mass graves and aerial dogfights and bloody beach front assaults were the play things of cigar chomping generals? Is this what all these cinematic renderings of dystopian, rough-tech, outlander colonies represent – humanity’s rise from the ashes of technological failure, willing into the not so perfect future a tangible sense of catastrophe?

Yet here we are, broken pixels and extravagant renderings of the universe archived in the video vault, side by side. The output data of machine vision is constructed from the chromatic colour palette in the form of brain scans, storm cells, Martian landscapes, metabolic activity and economic data. The very real interventions of the machine in the realm of new media arts and the very stylised renderings of the real in astronomy and physics research products of the same colour palette, written in the same language, born of the same stuff. Peering into the black mirror it’s hard to tell which video file contains more ‘truth’. But perhaps we’re not looking in the right places. The inability to see the future belies the highly skilled and immensely refined processes of 3D animation and the algorithms of the most complex data simulations. There is little difference between these exhaustive computational tasks and the rendering of realism in popular cultural forms such as *Steel Life* and *The Third and Seventh* or the wide screen Hollywood fantasies of *Avatar* (Cameron, 2009) and *Rise of the Planet of the Apes* (Wyatt, 2011). In each an attempt is made to articulate the future as an extension of our natural world in a realistic manner albeit sometimes with an altogether more fantastic premise. These may be simulations but they can be cross-checked with our understanding of physics: motion, gravity and natural and synthetic textures. These entirely digital constructions are designed to make data alive with detailed compositional techniques that play to our understanding of visual semantics and what constitutes the physics of light and perspective (archetypes of the form). Similarly the constructions of Microsoft, Nokia and Ericsson are stylised visions of the future designed by a team of human marketeers in service to the ability of the machine. They are, if nothing else, frustrating distractions, tormenting the present-future stasis with their seductive, just out of reach plausibility but it is the resignation to their ultimate unattainability that lingers longest. Herein lies the seeds of the broken promise. The simulation is as real as we have known anything to be, the image as fine and detailed as technology has been able to provide and yet our interpretation
of what this all means is broken by the unreality of the pixels themselves. We cannot possibly know the future. And this is the rub: “Right now, today, we can’t see the thing, at all, that’s going to be the most important 100 years from now” (Caltech & Mead, 2010). That holds for next month, next year and the decades that follow. The techno-cultural narrative is built on the conceit of the light on dark aesthetic because beneath the surface, the simulation is motoring along on the metaphorical cogs and wheels of Chevrolet, Google, Fritz Kahn and Thomas Edison - purveyors of the magic show of early and late modernity.

So while we have permitted the machine to become the most intimate of interrogators (of systems, infrastructures and ourselves) we are increasingly moving away from an understanding of that machine. As Sherry Turkle observes, “from the earliest days, simulation seduced” (Turkle, 2009, p. 70). Not by engaging with the operation of its origins but instead the visualisation of that operation – focusing our attention to the perfection of its reproducibility, drawing our eyes to its surface, to the appearance of meaning and to the gloss of its polished synthetic form. People are increasingly disconnected from the internal machinations of the devices they own, from the origins of the goods they buy and the science and engineering behind the services they subscribe to. The future is happening everywhere, but without us. In an era of profound data accumulation the iUser is incapable of rationalising the vast sums of information available. Instead we have been taught digital shorthand, not by our education system, or even by our parents or co-workers but by the manufacturers of the icons of the contemporary futurist ideal. In a frightening extension of Manuel Castell’s “society of information” we have not plugged into the information, we have plugged into a branded device that prescribes the information for you. The gateway to information is preloaded with the distractions, pay-walls, targeted advertising – systemic pathways to a “social media” fantasy. In the CyberCity what separates the iUser from that information – and from each other – is the aesthetics of the distraction, of the one-click search with the one-line answer, of remote socialisation, of black mirror identity and the constant reassurance of appealing interface design and satisfying futuristic ergonomics. Think about the packaging of an Apple device – the clean lines and sparse branding, the sharp folds of the card, the snappy plastic inlays, the cling wrap, the embedded modernist logic of its profit margins – made in China, designed in California, dug up in the Congo – etched into every box. The promise of the device is inherently present in the white space of its packaging. It screams at you: “I am a blank slate!” Only the user’s subscription to Apple’s services will turn this shiny sleek promise of the future into an object of function and value. Sadly it is also demonstrative of what Jarod Lanier refers to as “lock in” (Lanier, 2011, p. 8), its usefulness is limited to its relationship to a specific library of content, available to a specific identity and accessed only through a device chain of a particular corporate ecosystem. These are the caveats placed on culture
by proprietary software design and commercial investment in patents and licensing. Real cultural value that can be shared, recycled and re-evaluated at will is rapidly disappearing. The clash of the social values of culture and the limitations of the digital economy is an ongoing dilemma. The danger is that corporations and the associations which lobby on their behalf are far from creating new economic models but clinging to old ones under the veneer of packaging, software design and streamlined modes of access. As the concluding line from a report commissioned by General Electric in 1925 states: “Psychologists tell us that the subconscious mind rejects the untrue and unbeautiful” (General Electric Company, 1925). It is this rejection of the “unbeautiful”, a resistance to confirm or deny the “untrue” that has a deeper meaning in this context of the dark euphoric simulation. Product licensing, format dependency and proprietary applications aside, what this disconnect between the promise of the future and its less than perfect reality achieves is an expectation that all future narratives are false. The neo-gothic anxiety emerges when the well-produced, finely-tuned message is discovered to be in fact wrong. Instead what we would prefer is to merely look away; to not know. The techno-cultural narrative insists that we accept the simulation over the real. This then becomes the anxiety of seeing but not knowing, of sensing the weight of an idea but not feeling any resistance, of falling without finding the bottom.

/////

In this chapter we have seen how the network amplifies the multiplicity of meaning in image making by repetition, re-contextualisation and the reconfiguring the medium itself. This is achieved most energetically and most wilfully in the form of the remix and the supercut, techniques of collage and assemblage which attempt to break through the flood of information by underlining meaning and piping digital objects through new pathways and placing them in unexpected places. Largely an internet phenomenon, this act of networked redistribution is a reworking of Castell’s space of flows – via editing, layering and rerouting meaning, the very substance of the flow is being altered. This is network creep, this is the quest of the remix to draw attention and achieve some form of permanence through the prism of the hyper-simulated archive. The digital aesthetic is dominated by the iUser’s active participation in the life of the media object and the manipulation of the context and perspective of the object’s positioning in that archive.

In the following section we will see how this gothic anxiety goes beyond the simple visual communication strategies of technology marketing, media content design and the homespun futurist logic of companies like Microsoft and General Motors. Having already established the aesthetics of the liquid electric and the light on dark subtext in a wide cross section of moving image content I will
now focus on the broader social and political connotations of dark euphoria and gothic high-tech in other cultural forms such as PC gaming, independent cinema and historical documentation. I will demonstrate how the techno-cultural narrative also extends to government, the military, NASA and corporate aerospace industry. Further to this, with reference to the work of media artists such as James Bridle and Trevor Paglen, I will demonstrate how this narrative is composed within an ever more sophisticated climate of surveillance, automation and machine observation. Bruce Sterling’s figurative description of the act of falling at supersonic speed back towards an absent Earth will be charted across a century haunted by rapidly accelerating technological change. This will take in the anxiety of vertiginous space and manned flight from the Futurists to King Kong, from the Challenger Disaster to the iconic imagery of September 11. Most critically we will examine the transition of these artefacts from the act of their documentation to the image loop of their digital reconstruction and redistribution. To see these patterns emerge so starkly in the simulation of terror is to appreciate the endless state of repetition that the neo-gothic narrative engenders. I propose that the reaction to this collective technological accident has resulted in a rejection of the 20th Century’s fabled quest for the stars fed by a deep, creeping fear of the sky. Moreover, to recognise these signs is to see the dark euphoric moment’s DNA embedded in the image loop of the present-future space of flows.
Figure 190 Panel #1 from the *Dark Euphoria* series (Goodwin, 2011b)
04 The Darkness

It’s not dark yet, but it’s gettin’ there.


Most of the time we are not even aware of how close to violence we are, because we all grant concessions to avoid it. Like sailors smelling the breeze, we rarely contemplate how our surface world is propped up from below by darkness.


I feel that the balance between fiction and reality has changed significantly in the past decades. Increasingly their roles are reversed. We live in a world ruled by fictions of every kind – mass merchandizing, advertising, politics conducted as a branch of advertising, the pre-empting of any original response to experience by the television screen. We live inside an enormous novel. It is now less and less necessary for the writer to invent the fictional content of his novel. The fiction is already there. The writer’s task is to invent the reality.

- JG Ballard, writing in the introduction to the French edition of *Crash* (Ballard, 1985, p. 8)
04 :: 01 The Black Mirror

The weirdest thing is that new Kinect can also track your heart rate. Yes, the sensor can track micro fluctuations of blood flow in your face, through the combination of the colour feed and the active IR. This will be useful for fitness games of course, but there’s the potential here for use in survival horror games, ramping up the action if you’re showing a fear response. In fact, the camera also reads facial expressions – it knows if you’re smiling, frowning or looking surprised. All of this could be potential data for game designers.

- *Xbox One* preview in the *Guardian* (K. Stuart, 2013)

Digital technology is a filter that is going to modify perception by means of a generalized morphing, and this in real time ... we are faced with the failure of the analogical in favour of calculation and numerology of the image. Every sensation is going to be digitized or digitalized. We are faced with the reconstruction of the phenomenology of perception according to the machine. The vision machine is not simply the camera that replaces Monet’s eye ... now it’s a machine that’s reconstructing sensations pixel by pixel.

- Paul Virilio in *The Accident of Art* (Virilio & Lotringer, 2005, p. 65)

In the final section of this document I will interrogate the invisible – the background fabric of the digital. I will examine the properties of device technology, the simulated and the unspoken. I have discussed in some detail how the techno-cultural allure of the digital object is most acute in the mainstream narrative space of commercial art direction and advertorial story telling. Yet this allure is shadowed by a darker aesthetic tendency representative of inherent neo-gothic anxieties. While the liquid electric may lead back to the source of power, of life or of power...
intelligence, it is the darkness from which it springs that holds the key to interpreting the broader notion of the dark euphoric temperament.

Charlie Brooker's television series for Channel Four, *Black Mirror* (Brooker, 2011), in the United Kingdom articulates the moody uncertainty about devices and the intervention of data in a near future dystopia which for all appearances would seem a logical evolution of the present technocultural narrative. The opening title sequence features a morphing graphic of scrambled characters in nostalgic DOS white on a black screen. The characters unravel like a convergence of Playstation controller buttons, streams of data in the *Matrix*, and cryptic symbols from the *Alien* series of films. The text eventually unscrambles to reveal the series title, *Black Mirror*, before the faux screen splinters and cracks. For smart phone owners the look is familiar, but this short sequence of iconic graphical symbols from high-end entertainment industry franchises is wonderfully representative of the mystery, darkness and futurism at the heart of the mobile technology. And while the smart phone is a convergent device designed to communicate, organise, store and distribute personal information it is also a bridge to the future. As William Gibson has noted, “The kids being born today will grow up finding the quaintest thing about the past was that people had these different devices that had discrete functions” (Gibson in Beers, 2007). Brooker’s series convincingly plays with the possibilities of what these rapidly evolving and relatively embryonic technological practices might present in a near-future dystopia. By taking the practice of personal video documentation – another smart phone feature – to its extreme in the third episode in the series, ‘The Entire History of You’, devices such as mobile phone cameras and Google Glass-type technologies have been usurped by the “Grain” – a video storage and playback device embedded beneath the skin behind a person’s ear. This device records everything a person sees directly from their vision. It allows them to replay, at various speeds, any point in their lives at any desired moment. The Grain can also wirelessly transmit onto screens in homes and offices so you can share replays, or “Redos”, of your lived experiences with others. And it is this concept of the Redo which is so profoundly disturbing. At first the ability seems like fun for those chance observations and once in a lifetime experiences, even helpful for those absent minded moments, “Where did I leave the car keys?” But it also has a sinister aspect. The Redo, is not just replay of memories, it is the act of reliving the first person experience, you are *redoing* life – a business meeting, a holiday, a sexual encounter, a lie ...

---

66 The Grain also permits deletion. The script seems to suggest early on that the amount one deletes is a measure of one’s character and has some repercussions in the work place. In what appears to be a job promotion interview at the very start of the episode the principle character, Jonas, is asked whether or not HR would find anything “that would freak us out” or any “major deletions this last quarter” when doing a comprehensive Redo prior to taking up a new position. Jonas replies that any deletions were “well within the parameters” (Brooker, 2011).
In the first episode of the second series, ‘Be Right Back’, deceased loved ones can be re-assembled as cognisant avatars with whom friends, partners and relatives can interact with long after they are gone purely by rebuilding them with the “digital DNA” the dearly departed have left behind on their mobile devices and in the data patterns of their online behaviour. Leigh Edwards articulates the dark irony of this technological fantasy in her *Boing Boing* post, *Black Mirror decodes our modern dread of technology*: “You can’t help but be gripped with the unease of wondering how much the black mirrors know about you. If it’s enough to resurrect you, how much of your essence have you divested onto the infrastructure? Twitter and Facebook obsess us with ideas about “sharing” and socialization, but is that really your life “on there,” or a thin, troubling simulacrum?” (Alexander, 2013).

Elsewhere the commercial advertising of screen based devices has evoked the black mirror as a wellspring for a techno-futurist darkness lurking within the device as well as possessing the potential to influence and manipulate the device’s environment. HTC fetishizes the liquid metal aesthetic with an abrasive combination of sound and image for a model of phone aptly named the Sensation (see Figure 192). Metal filings appear on a dark sheet of what appears to be glass, the filings are magnetised and they shudder and pulse to a foreboding electronic soundtrack rising and receding back into the polished black surface. They converge into a thick liquid–like substance – time shifting, space shifting – a purple-black ooze bubbling to the throbbing abrasive sound track which emanates from a large speaker cone. This becomes the product stage as the dark liquid substance eventually gives form and shape to the HTC Sensation. The advertisement is reminiscent of the Playstation 3 commercial,
“Fade To Black”, which employs a similar visual motif of technological liquefaction. The clip opens in a white cube, a room, a research lab perhaps, stark fluorescent lighting, bare except for a black Sony Playstation sitting ominously on the white floor. A thick black ooze seeps from the device across the floor and up the walls before we begin to detect images in the liquid – video images, game sequences, football – the black ooze becoming the screen, becoming everything. In another variation of the same sequence of White Room adverts the Playstation is accompanied by the Playstation controller and a half a dozen large white eggs. The controller rises magically from the floor, the fanfare of the sound track tells us that magic is afoot, the controller, like a ringmaster, beckons the eggs across the floor before violently hurling them against the opposing wall, but instead of exploding the eggs transform into a murder of black crows materialising in full flight from the surface of the wall – “only on Playstaion 3” (TBWA\Chiat\Day, 2007a). In another series of commercials the Playstation morphs into a variety of objects to invoke the genres of gameplay available on the console. Here the magical properties of the gothic high-tech dreamscape - black plastic, polished metal, black mirrors - morph into fists, knives, canons, swords and claws. In another promotional image by Sony this proudly Japanese company invokes the horror of the past in the infamous “PS3 Mushroom Clowns” print advertisement to promote a forthcoming game available on the console (see Figure 195). The commercial’s tag line states: “one machine, limitless potential”
A tag line that could almost have been lifted from the script of Dr Strangelove (Kubrick, 1964). One can imagine General ‘Buck’ Turgidson muttering excitedly, cigar clenched in his square jaw, about the technology of the A–Bomb: “one machine, limitless potential”.

But what are we looking at here in these renderings of a dark synthetic amorphous origin? If the essence of the future – or some technocultural truth – is present in the liquid electric of science fiction and commercial advertising, what is this comingling of metal, plastic, glass and dust? Does this dark liquid metal have its origins somewhere within the device, beyond the screen? If the universe is analogous to grains of sand on a beach, and sand the material of glass, then what do we understand of the potential endlessness of the black mirror? With the ubiquity of the device comes the ubiquity of the reflective properties of the glass, simulation as an infinite loop. So, is the darkness inherent in the techno-futurist device we clasp in our hands, or is it the user who feeds the darkness by association?

Certainly the concept of “Conflict Minerals” has become an unwanted headline issue for component manufacturers and distributors of consumer electronics. These metals, roundly referred to as the 3Ts (tantalum, tin and tungsten) are extracted from a group of three minerals: coltan, cassiterite and wolframite. The vast majority of these minerals are sourced from the primitive mining operations in the Democratic Republic of the Congo. The mining is done by hand, often by children, at gunpoint and under appalling working conditions. The horrific background narrative of these “dark metals” reached prominence in the late 2000s with a number of reports released by established news agencies, the United Nations and humanitarian organisations detailing
It wasn’t until 2008 when human rights groups and American law makers started questioning the ethics of sourcing such minerals from countries like the Congo that the practice gained widespread media attention. Regulatory progress was even slower. Not until July 2010 did the American government under President Obama enact the Dodd-Frank reform bill requiring publicly listed American companies to disclose the origin of the minerals used in their manufactured components especially those sourced from mines controlled by armed militia in and around the Congo. In a National Geographic investigation, *The Price of Precious*, from October 2013, journalist Jeffrey Gettleman and photographer Marcus Bleasdale observed the crisis first hand. Their account perfectly evokes the dark euphoria of the liquid metal narrative:

In Nyabibwe all of the easy-to-reach cassiterite was dug up long ago, so today’s miners must bore deep into the mountain, using only hammers and shovels. Inside one tunnel, named Maternity, the mother tunnel, the walls were moist and slimy and narrower at each step. In the thick darkness there was no sense of up or down, just the drip, drip, drip of water and the faint sound of men singing from deep in the bowels of the Earth (Gettleman & Bleasdale, 2013).

---

67 The crisis in the Congo which backgrounds these mining operations and other forms of trade out of the east Congo has been ongoing in its current form since at least 1998, reports by the International Rescue Committee claim that 5.4 million people have perished as a result of this conflict since 1998. For detailed information see *Congo Crisis at a Glance* online. A ranking of companies in relation to their sourcing of conflict minerals can be found at the *Raise Hope for Congo* campaign page.

68 The reform does not take effect until June 2014, is restricted to the United States and will have a phase-in period of a further two years. For more on the detail of the reform and the cost and complexity of implementing it see Robert Bowman’s *Forbes* article, “Companies Need to Step Up to Meet New Conflict-Minerals Reporting Rule”. For corporate governance guidelines see the Deloitte site, *Conflict Minerals: Understanding Compliance Challenges*.

69 See Marcus Bleasdale’s account of photographing in the mining towns of the Democratic Republic of the Congo and the power of visual imagery in this short profile video.
Compounding this dark device history is the suspect manufacturing and assemblage practices by component manufacturers working for companies such as Apple, Samsung and Dell. In 2012 it was discovered workers in Foxconn plants in China were enduring onerous conditions, suffering fatal injuries and succumbing to toxic chemicals, primarily n-hexane which has been known to cause permanent nerve damage and leukaemia. According to the New York Times, Foxconn is responsible for the assemblage and manufacture of components for most popular electronic devices including “products for Sony, Panasonic, Samsung, Sharp, Asus, Hewlett-Packard, Dell, Intel, I.B.M., Lenovo, Microsoft, Motorola, Netgear, Nintendo, Nokia, Vizio, the Xbox, the PlayStation and the Amazon Kindle” (Pogue, 2012b). And while the production line of electronic device manufacturing may indeed be tainted by apparent negligence, under age workers and suspect practices, the narrative of dark metals does not conclude in the palm of the user’s hand or upon the user’s desktop but in

---


71 See the original exposé by Times journalist David Pogue (Pogue, 2012a) and his follow-up post (Pogue, 2012b) in which Pogue contextualises the ABC News Nightline program (ABC News, 2012) which painted a much more flattering – but somewhat compromised – view of the Foxconn operation. Further to this, an important look at the broader debate about work conditions, globalisation and electronics manufacturing can be found at the Economist and Model Behaviour websites.

72 See Matt Warman’s article in UK’s Telegraph newspaper which details concerns by Foxconn workers over their health standards and working conditions, “‘iPhone workers’ beg Apple for better working conditions” (Warman, 2012). Tania Branigan at The Guardian conducted interviews with some of the affected workers in her article, “Chinese Workers link sickness to n-hexane and Apple iPhone screens” (Branigan, 2010).
their dustbin. In the Chinese city of Guiyu and in the Ghanian town of Agbogbloshie exist two of the largest e-waste dump sites on Earth. In these places of squalor, of poisoned air and metallic river beds the West’s electronic refuse is harvested for its dark metals by some of the most chronically poor and vulnerable people on the planet. In Guiyu, 80% of children have high levels of Lead in their blood and suffer symptoms from exposure to dust that carries particles of Lead, Copper, Nickel and Zinc. Guiyu supports an industry that is devoted to the extraction of precious metals from discarded electronic devices and appliances (see Figure 199). According to local authorities “the region dismantles 1.5 million pounds of junked computers, cell phones and other devices a year” (Chung, 2009). In this town of some 5,500 businesses mostly comprised of family workshops, peasant workers “heat circuit boards over coal fires to recover lead, while others use acid to burn off bits of gold. According to reports from nearby Shantou University, Guiyu has the highest level of cancer-causing dioxins in the world and elevated rates of miscarriages. ‘You see women sitting by the fireplace burning laptop adapters, with rivers of ash pouring out of houses,’ says Jim Puckett, founder of Basel Action Network (BAN), an e-waste watchdog” (Walsh, 2009).

In Agbogbloshie, a former wetland in Ghana inhabited by 40,000 immigrants and known to locals as “Sodom and Gomorrah”, the e-waste arrives in shipping containers labelled “development

Figure 199 Guiyu, China’s Electronic Waste Village (Chung, 2009).

73 For a detailed study into the scientific assessment of data taken from the Guiyu township see “Heavy Metals Concentrations of Surface Dust from e-Waste Recycling and Its Human Health Implications in Southeast China” article in Environmental, Science and Technology (Leung, Duzgoren-Aydin, Cheung, & Wong, 2008, p. 2674).

aid” or “second-hand products”. Here in this place children as young as seven can earn as much as $2.50 a day by extracting metals from televisions, computers, refrigerators and other electronic equipment by bashing them with rocks. Here old computer monitors are used to make step bridges across the black waters of the river Odaw (see Figure 200). Here men in their twenties are dying from cancer while others suffer from “a range of debilitating injuries such as burns, untreated wounds and eye damage. They are also struck down with chronic nausea, anorexia, respiratory issues and severe headaches” (McElvaney, 2014). They twitch, they shake and they tremble from the inhalation of burning plastics and insulation foam. As one boy Idriss Zakarias remarked, “What you do to get money, is what kills you.” Photographer Kevin McElvaney spent four days in Agbogbloshie documenting the waste dump and its inhabitants, hundreds of which were children, “If you stand next to them you can see that some have red eyes, shake themselves all the time, cannot concentrate, scratch themselves and seem restless” (McElvaney, 2014).

Undeterred by such criticisms R&D divisions at large corporations such as Apple, Microsoft and Intel and government funded departments like NASA and DARPA continue the quest to deliver the promise of a liquid ambient future. In 2010, Apple Corporation signed an exclusive licensing deal to commercialise a substance called Liquid Metal, developed in a research partnership between The California Institute of Technology, The United States Department of Defence and NASA. Apple has

Figure 200 Discareded computer monitors and televisions are used to construct a makeshift path across the murky wetlands in Agbogbloshie, Ghana.

Figure 201 A worker lights a fire using foam insulation from a refrigerator in Agbogbloshie, Ghana (McElvaney, 2014).
since filed extensive patents on numerous applications for the combination amorphous alloy for the manufacture of flexible yet highly durable devices and equipment such as cell phones, tablets and watches. The unique properties of the substance allow it to join with other hard substances such as glass, steel and ceramics. The alloy is already being used for surgical scalpels, in the tips of armour piercing bullets, drill bits for oil rigs and NASA has put it to use in space (Herrman, 2013). Is this the preferred alloy of a future device with designs on both malleability and infinitude? Is this a permanent fixed address for the interface between us and our avatars and our data node on the network? After all, liquid metal is malleable yet rigid enough to form an “enduring bond”, it has a solid metallic permanence we cannot emulate, the black mirror with a future built on the promise of forever. Are we really ready for a “life companion” as Samsung has suggested? In its most simple representation however it strongly resembles the light on dark aesthetic: the lusty chrome–like surface alloy that tidily conceals the wolframite, cassiterite and coltran within.

The parable of liquid metal or similarly alien often cognisant and always superior liquid–like substance, has a deep history in a variety of disciplines. Evidence of its ubiquitous presence abounds, from the silicon substrates inside our computers and communication devices, to the drugs, vaccines and plasma materials we inject into our bodies for our pleasure and our survival, to the very beginnings of the universe via the quark–gluon plasma (aka “the perfect liquid”) in the exotic soup which constituted the universe nanoseconds after the Big Bang (Mihai, 2011). There has always been something foreign, intelligent and operative within us that is from – or reminiscent of – a liquid ambient history. In visual culture this relationship has been articulated through a range of media that play to our most primal fears. The cinematic origins of a sinister liquid with chameleon–like properties is the most obvious: beginning with the 1958 kitsch classic The Blob (Yeaworth Jr., 1958), to a more convincing appearance in The Abyss (Cameron, 1989), to perhaps the most technologically profound articulation in Terminator 2: Judgement Day (Cameron, 1991). Even the climactic sequence of Star Wars: Episode III – Revenge of the Sith (Lucas, 2005) can be seen as an origin story for the birth of not only the darkness that finally engulfs Anakin Skywalker, but the bubbling volcanic earth is the liquid from which he is born anew. Science Fiction cinema’s pre–eminent villain Darth Vader was recast from the immense heat and pressure of molten rock, surely liquid metal’s most fantastic creation.

Environmental manifestations of dark liquid are also present in broadcast media: the oil slick in the Gulf of Mexico, the red aluminium toxic sludge in Hungary, algae blooms on the Barrier Reef,

---

75 For more detail on the Apple patents see both Mac Daily News (Hamilton & Snyder, 2013) and Patently Apple, (Herrman, 2013) the latter also has a video clip from Omega about their implementation of liquid metal and ceramics in their products. More product details and applications produced by Liquidmetal Technologies can be found on their company website.
the North Pacific Subtropical Gyre and the leaking cooling pools of the Fukishima nuclear reactor. There is something very disconcerting about a liquid – especially a liquid that has become unhinged from a prescribed space and purpose. The anxiety of millennial technoculture can be found in liquid technologies – and the liquid accidents – of our recent collective past. These dark water properties – of past perils, of fictions and histories – feed our innate suspicion of the techno-cultural narrative’s more apocalyptic tendencies. The menacing narrative of the dark liquid is certainly present in our contemporary notions of water – especially masses of water - as we reluctantly begin to acknowledge the most destructive liquid of them all: the rising sea.\textsuperscript{76}

In the fibres of the network, nuclear annihilation sits ominously alongside the growing clutter of other equally opaque yet suitably apocalyptic distractions – global terror, religious fundamentalism, and environmental collapse being the dominant background pathologies of the new millennium. While this thesis is not an examination of the end as a social or political invention, as it is for Žižek and his contemporary Evan Calder Williams, the end of the capitalist ideal of course hangs heavy in

\textsuperscript{76} There are two dominant narratives of climate change data seen by most as valid yardsticks of how bad environmental conditions are and how bad things may get: temperature and ocean levels. These of course are linked and the mapping of these two indicators has been fairly consistent to date pointing to a steady increase in both. As political scientist Nafeez Mosaddeq Ahmed has noted: “Many scientists concede that without drastic emissions reductions by 2020, we are on the path toward a 4°C rise as early as mid-century, with catastrophic consequences, including the loss of the world’s coral reefs; the disappearance of major mountain glaciers; the total loss of the Arctic summer sea-ice, most of the Greenland ice-sheet and the break-up of West Antarctica; acidification and overheating of the oceans; the collapse of the Amazon rainforest; and the loss of Arctic permafrost; to name just a few. Each of these ecosystem collapses could trigger an out-of-control runaway warming process. Worse, scientists at Lawrence Berkeley National Laboratory and the University of California at Berkeley now project that we are actually on course to reach global temperatures of up to 8°C within 90 years” (Ahmed, 2010).
In simple terms this could be seen as perhaps a collective consequence of the millennial transition from technocultural simulation to the neo-gothic reality of the dark euphoric turn.

In this context then the notion of the allegory, as Fredric Jameson sees it, is a useful tool to unpack and express the condition of the contemporary aesthetic of digital media. At a time when notions of digitisation, the virtual and the avatar present us with questions pertaining to our own identity and our own presence in the world the underlying anxieties of the techno-futurist narrative becomes all the more evident. For “allegory is precisely the dominant mode of expression of a world in which things have been for whatever reason utterly sundered from meanings, from spirit, from genuine human existence”

77 For an in-depth socio-political account of the atmosphere as it were, Mark Fisher’s Capitalist Realism (Fisher, 2009), Evan Calder Williams Combined and Uneven Apocalypse (E. C. Williams, 2011), Peter Sloterdijk’s Terror From the Air (Sloterdijk, 2009) and Vincent Mosco’s Digital Sublime (Mosco, 2004).

78 2011 bore witness to several socio-political upheavals which background the writing of this text and are inextricably linked to notions of the network and the question of progressive and stable governance, principally the UK riots, the Occupy Movement and the rise of the Arab Spring. And while these do feed into a strong anti-capitalist/anti-dictatorial narrative thread what they also emphasise is the allegory of technology as active participant in social change. Here the network is an enabling technology and revolution is a visual mediated event. For more on this see Slavoj Žižek’s The Year of Dreaming Dangerously (Žižek, 2012).
(Jameson, 1971). Powerful evocative images have performed the function of allegory in a variety of media in recent history all of which examine these questions albeit with the added layer of mediated optics and networked repetition. Grand narrative constructs of widescreen nuclear annihilation, close-up examinations of malnutrition and the random black and white chaos of Vietnam reportage have been replaced by allegorical snapshots: the plastic shopping bag sequence in *American Beauty* (See Figure 74 on page 86); the smoking skeletal remnants of the iron framework of the World Trade Centre in New York (See Figure 233 on page 234); the Abu–Ghraib image used in the *Iraq* poster by Copper Greene (See Figure 174 on page 179); the CCTV footage of a crazed Tomohiro Kato buying the knives he would use in his Akihabara stabbing spree (see Figure 207); the crater from the Chelyabinsk meteor strike in Russia; Guatemala’s seemingly bottomless urban sink holes and the inextinguishable 40 year fire in the gas crater in Turkmenistan (See Figure 203 on page 209). Like the dark liquid objects before them, in isolation these image documents have considerable narrative power as strong visual textures of a specific time and place in history. Yet together, in repetition and in their reproducibility, they signify something deeper – a profound tapestry of absence. It is a tension that exists in the duality that the experience of loss engenders: from both the past in which something lost cannot be recovered and the future in which something promised cannot be touched.

Žižek in his discussion on Heidegger’s *On the Question of Technology*, places this tension squarely at the point of our fatalist digital moment, “What if both the utopia – the perverted dream of the passage from hardware to software of a subjectivity floating freely between different embodiments – and the dystopia – the nightmare of humans voluntarily transforming themselves into programmed beings – are just the positive and the negative of the same ideological fantasy? What if it is only and precisely this
technological prospect that fully confronts us with the most radical dimension of our finitude?” (Žižek, 2006) Certainly, the restructuring of the communist/capitalist narrative via the “New World Order” which Baudrillard wrote of so extensively provides an overarching diffusion of what such forces mean in a global and local context but they are more of a distraction than just the causal effect of the techno-futurist narrative. The “weak event” that Baudrillard refers to in his 1989 essay is the fall of the Berlin Wall. And while this may historically represent the end of the communist state as a global force it also represents – in aesthetic terms – the beginning of the end of the West’s “us and them” world view of global power structures. Fred Kaplan writing in Slate magazine emphasises the significance of the fall of the Berlin Wall and the political paradigm shift this created:

No one country can shape the world the way it once did, because the world has grown less malleable. The turning point, in this regard, wasn’t 9/11 but 11/9—Nov. 9, 1989, the date the Berlin Wall fell, followed soon after by the collapse of the Soviet Union and, with it, the Cold War. The Cold War was a time of dread, but it was also the dominant feature of global politics since the end of World War II. It set the alliances, rules, and measures of power that fostered and fed America’s rise (Kaplan, 2014).

The Wall’s fall in turn had a broad range of knock-on effects through culture as the world now free from Cold War uncertainties and epic dangers opened up as a seemingly more stable, prosperous and better understood place. Yet it was in fact the opposite of this, it became quite obvious that the world was suddenly less stable, more complex and was pursuing a techno-futurist trajectory even less certain. In this new dynamic space, linearity gives way to rhizomatic information, the exclusive academic pastures of the DARPA web give way to a loose configuration of public and commercial networks, the first age of electronic media gives way to grunge and Ray Gun magazine (1992), U2’s American tribute Rattle & Hum (1987) becomes their Berlin future-scape Achtung Baby (1991) (see Figure 209) and the approaching turn of the century becomes the countdown to an uncertain technologically infused future. In the decade and a half since the

79 In the early 1990s the Balkan conflict escalated dramatically as the crumbling of the Soviet Bloc gave way to long simmering political and cultural tensions in Eastern Europe. Wars continued throughout the 1990s most notably in Chechnya and Kosovo and the less visible conflicts across Africa, namely the Sierra Leone, Somalia, the Congo and Ethiopia. The increasing disparity between race, geography and income - those included in the global narrative and those who were not - flared up on the streets of Los Angeles with the Rodney King Riots of 1992 and again later in the decade at the WTO protests in Seattle in 1999 providing startling video footage of post-Cold War America to the world. Moreover America seemed at war with itself with images of tanks and soldiers filling the nightly news during the coverage of the siege in Waco Texas in 1993 and the dramatic escalation of the War On Drugs which saw the quadrupling of incarceration rates from 50,000 in 1980 to 400,000 in 1997 (Drug Policy Alliance, 2014). Bombings at the World Trade Center in 1993 and in Oklahoma City in 1995 and the shooting at Columbine High School in 1999 added to the impression that the absence of a dominant narrative sans Cold War was having a profound effect on American domestic stability and the myth of security of a globalised “new world order”.

211
millennia clocked on this period of intense transition has demonstrated a strong historical and aesthetic loop back to the Futurist manifestos of an earlier time and the imagery it conjures – both in their subject matter and the method of their making - signals a distinct break from the past. Yet where Modernity, as described by Paul de Man, must “sever” itself from the past to understand its future, Modernity is essentially a contradictory experience that “makes the past irrevocable and unforgettable because it is inseparable from any past and future” (De Man & Godzich, 1983). This paradox has been brought into even sharper focus with the accumulation of the cultural archive that is the World Wide Web and its associated network operations. A data space where history can be annotated, challenged, reorganised, redrawn or rejected; an ideological database rather than a historical dustbin.

While the lessons of history do in fact become weak, transient or even unfashionable the network as living digital archive essentially becomes an unregulated simulation of events past and present. As this simulation weaves through the blizzard of detritus data on the network it picks up the emotions, prejudices and characteristics of the user, and in the context of this discussion, pulls into startling relief the permutations of digital culture’s associated fears and anxieties. The close out of the 20th century becomes a data space, a presence. To return to Kim Stanley-Robinson’s observation of technology’s increasing omnipresence, it would certainly appear that “we live in a world so intensely structured by science and technology that we can’t get out of it” (K. S. Robinson, 2009). And while the techno–futurist’s dominant narrative is of order and logic – like corporate branding, like a World’s Fair, like a software interface, like an iPod – there also exists an underlying sense of chaos and uncertainty and of what Robinson refers to as the “anticipated strangeness” of things. This is replicated in the systems and cyber
culture ideologies built into the ecological metaphor of the network in the media at least substituted for any real understanding of the network. This was also done for symbolic effect but also to legitimise the peculiarities of the techno-cultural narrative as the natural order of things especially when that order starts to fall apart.\footnote{Lutz Dammbeck’s critique The Net: The Unabomber, LSD and The Internet (Dammbeck, 2003) and Adam Curtis’ two BBC television series from 2007 and 2011 are illuminating parables for gaining an understanding of the ecological perspective of systems thinking as drawn up by the cyberneticists and repackaged by the counter culturists of the 1960s. In one episode of the series ‘The Trap: Fuck You Buddy’, Adam Curtis plots the rise of game theory unpacking and setting in motion a sequence of ideological constructions which find their ultimate conclusion in the design of government policy design in Tony Blair’s “New/Cool Britannia” (Curtis, 2007). While the emergence of ecology as a system’s theory was co-opted by the counter cultural movement and later by the Silicon Valley digerati, Curtis finds a chilling subtext to this evangelism in contemporary society in the series All Watched Over by Machines of Loving Grace (Curtis, 2011). Coupled with Dammbeck’s critique these documentaries are instructive documents which use found media, filmed screens of screens and archival footage to forge the links between cybernetics, ecology and the evolution of the computer and network society in the last decades of the 20th century.}

Using nature and organic metaphors to describe the processes and systems of a machine has numerous consequences especially if this metaphor is then used to map those technologies back on to the user via the devices and machines they inhabit. These ecological metaphors and allegories – the web portal is an “organism”, the system is “alive”, the software “adapts”, the meme is “viral”, the network is an “ecosystem”, etc – have been increasingly employed to describe the advancement of communication technologies and network operations. This language defines a definitive new direction for the techno-cultural narrative, one that has a more profound resonance deep within evolutionary history. Therefore “what we would normally conceive as specific and isolated technologies are participants in a broader natural and cultural flow in a ‘machinic’ dimension” (Murphie & Potts, 2003). Taken to its logical end, users then become part of the machine. The machine, built on ecological principles, becomes not companion but replicant. The machine becomes us; we become the machine, bound together reflections in the network. As George Dyson relates in a 2003 interview with the Institute for the Unstable Media in Rotterdam:

The present global network includes both processors (computers, routers, servers etc) and the web of connections between those nodes. Are human beings nodes connected by computers or are computers nodes connected to human beings? Is it human beings feeding the network (with information and resources) or is it the network that’s feeding us? Both. Individual computers are only simple, primitive ecosystems, but collectively they are rich and complex. The code permeating this ecosystem is rapidly becoming multicellular; codes are proliferating (and competing) across the network by running on many processors at once. The age of metazoan digital processes has just begun (G. Dyson, 2003).
This new eco–order of the network and the user’s place in the symbiotic exchange echoes the systems thinking and cybernetic theories outlined in the early texts of Norbert Weiner and Buckminster Fuller and the work of the Macy Group and second order cyberneticist Heinz von Forester in the 1950s. Cybernetics and systems theory were championed by the avant-garde and the counter culture movement of the 1960s as the arts and a new bohemian left collided with a broader call for individual freedoms, human rights and ultimately the emergence of the environmental movement. From the writing of Fuller in particular, the musical explorations of John Cage, the expanded cinema environments facilitated by John Brockman, the symbiosis of NASA’s Earthrise image and the publication of Stewart Brand’s *Whole Earth Catalogue*, the link between human freedoms and societal change were forever linked henceforth to the notion of the ecosystem. Systems thinking was a useful metaphor for the bourgeoning

---

81 There is little published material on the early meetings of the Macy Group as initially there was no official documentation of proceedings. There are a few historical records of the early Macy Conferences on the web including the American Society for Cybernetics (American Society for Cybernetics, 2013), while Steve Heim’s 1991 text *The Cybernetics Group* continues to be the default historical record covering this period. (Heims, 1991).

82 For a verbal history of the emergence of network aesthetics, media arts and cybernetics see interviews overleaf with John Brockman, Stuart Brand and Heinz Von Foerster in *The Net: LSD, the Unabomber & the Internet* (Dammbeck, 2003).
network technology of the time and the collaborative arts and sciences as antithesis to the dualism of the contemporary Cold War social order. It therefore emphasises the power of the liquid electric metaphor in communicating technological processes and the use of rare metals in technological invention as profoundly organic acts that appeal to both the light and dark motivations in human technological endeavour.

The current end-game of the ecological representation of machine technology is the rise of a new hyper–ecology of the network. Built on an evolving narrative of techno–futurist conditioning this machine-ecology is in many respects playing itself out as the dominant meta–myth of the new millennia. And within this moment the dichotomy of the transitional axis becomes apparent as we transition from machine simulation to the ecological metaphor, from the cheerleading of domestic “white goods” to the menace of the dark metal substrate of the black mirror device. As the iUser moves away from the cyberneticist’s promise of an open ended non–hierarchal societal system gothic high–tech begins its ominous ascent. The dominant temperament becomes anxious, suspicious yet disengaged. Network ecology becomes a brand, it produces nothing but dubious products; a synthetic Utopia. Instead, flanked by a military design aesthetic, panopticon skies and an endless state of future–failure the neo–gothic condition presents a convincing yet precarious mode of reality. Media artist Toni Dimitrov observes that this failure of vision and of imagination is a precursor to a more totalising anxiety about

Figure 213 Interviews with John Brockman, Stuart Brand and Heinz Von Foerster from The Net: LSD, the Unabomber & the Internet (Dammbeck, 2003).
technology, systems and their manipulation by others:

Everything that is presented to us as a system that aims to ease our life, is not actually quite so. Take for instance, science and technology, and their goal to “work” for the benefit of humanity. It is not just that they do not seem to make life easier, but on the contrary their usage is harmful for humanity. Exactly from the moment when the greatest hopes were given to technology, science and the great theories, they seem to have failed to fulfil the expectations. Instead of being tools for achieving the ideals of humanity and attaining prosperity, they are becoming the most powerful tools of the system for establishing new forms of power and domination (Aleksovski, 2011).

The totalitarian use of media technology or more specifically image production tools by government and by corporation alike has emerged as the dominant gothic trope in mainstream popular culture. Couple this with the wider social, political and economic relativism of the closing years of new millennia’s first decade and it is easy to see how notions of truth and representations of the real have been reduced significantly within a communication network that is transitioning between nature and machine and back again. This reductionism would appear to have reached its apex in the wider mistrust in technological progress that seems to have beset informed political debate where scientific reason has been marginalised for market based imperatives and/or political expediency. Paul Virilio suggests this is explicitly linked to techno evangelism – “science has become techno–science, it sells products” (Virilio & Lotringer, 2005). In one sense science becomes weak when confronted by political debate and economic rationalism because despite statistics, despite complex simulations and despite a dearth of evidence, science cannot seem to author a universal calamity such as climate change into reality. On the other hand, science has become a part of a separate more powerful narrative, in the highly competitive territory of advertising space. As Dimitrov observes, “It is Virilio that warned us that almost every critique toward the technology disappeared and that we unconsciously accept every innovation without critical view of its consequences, by which we slip in the dogmatism of totalitarian technoculture” (Virilio & Lotringer, 2005).

The gothic high-tech fear is based on the anxiety of the unknown – the technological unknown. The impulse to explore, test, deconstruct and articulate this fear has leached out across the broadcast loop of contemporary cinema, surfaced in data visualisation techniques of science and commerce, manifested in the properties and subtext of digital illustration and animation and, perhaps most ironically, in the promotion of an all seeing, all encompassing all serving consumer electronics lifestyle via big media advertoirals and the corporate identity design of Silicon Valley’s software and gadget pioneers. And so here lies the uncertainty embedded in the techno–futurist mantra: uncertainty related to the boundaries between the network and the end user, a mistrust for
the invisible and the visible operations of the machine and perhaps, most crucially, a genuine anxiety for how we might shift direction if we are indeed falling, as Bruce Sterling has described, into the unknown at velocity. Virilio notes that the deeper trauma of the technological accident is often hidden within the mediated spectacle of the accident:

Overexposure is the live broadcast, it is real–time replacing the past, present and future. A society that heedlessly privileges the present necessarily privileges the accident... So somewhere the end of the future and the end of the past, in our societies of immediacy, of ubiquity, of instantaneity, are necessarily the advent of the accident (Virilio & Lotringer, 2005, p. 109).

As Virilio suggests, this spectacle is authored by the mass media but also by devices and the network. We have become stranded somewhere at the “end of the future and the end of the past” hands on the wheel as the catastrophe hurtles up from the ground below triggering our instruments, lighting up the dashboard but leaving us squinting through the grime and the dust and the bird shit. We are seated. Locked in and logged on. A vulnerable perilous existence. As Donna Harraway cautions, “our machines are disturbingly lively, and we ourselves frighteningly inert” (Harraway, 1990, p. 152). Inert, foetus like, in a capsule travelling at unnatural speed. And so, steadily over a century, the future has gradually receded from view, slipped from our grip, to be authored by the machine. Have we succumbed then to the darker substance in the techno-cultural narrative by a forced narrowing of our futurist perspective? Is this the reductionism of vision, the tightening of our field of view, the ultimate lowering of the horizon line?

/////

I have illustrated in previous chapters how this came to be through humankind’s gradual retreat from the stars as NASA retired the Space Shuttle fleet and the space race became a blatantly commercial and military pursuit. In this new realm of space dreaming science melded into fiction and military enterprise became the new technological utopia of machine vision. The trick was not to go there but to simulate the act of having been there. The quest to see nature’s sub-atomic fabric – to see the invisible was machine vision’s most fantastic creation.

The reduction of the horizon line manifested itself in an increasing paranoia of the falling skies, not as 20th Century atomic fantasy, but as a very real and very present threat of climate change, falling planes, satellite surveillance, and rogue asteroids. The following chapter will take this idea further by illustrating the link between the Futurist’s fancy for manned flight and vertiginous space and the cultural artefacts of contemporary cinema and media arts production. With countless
symbolic imprints of the events of September 11 surfacing in the years that followed gothic high-tech’s penultimate act the perceptual shift of our point of view from the skies to the ground below was complete. I will examine how the great turning away from the skies continues to have a very strong presence in popular culture. The neo-gothic anxiety that it engenders appears across a range of media and ultimately in the documentation and archiving of history itself. From super heroes to pornography to Don Draper, the flirtation with great heights has a deep heritage in recent technocultural narratives. While the dark euphoric fall back to Earth – as foretold by the 20th Century, as described by Bruce Sterling, as felt by Steve Jobs, and as witnessed on September 11 – is the new millennia’s ultimate end game.
Figure 214 Assemblage of Alfonso Cuarón's Gravity and Michael Najjar's Space Port (Goodwin, 2014)
The "Non–Mediated World" has become a lost country. And I think that, in some very real way, it’s a country that we cannot find our way back to. The mediated world is now THE WORLD. We are that which perceives a mediated reality. I don’t think it’s possible to know what we’ve lost. We just have...I think there is a pervasive sense of loss, and a pervasive excitement at what we seem to be gaining. And they seem – those two feelings – seem to go together, in effect, to be parts of the same feeling. It’s like Fredric Jameson’s "postmodern divide": you have it right there. That sense of loss, and that sense of Christmas morning, at the same time.

It’s that "truth–is–stranger–than–fiction" factor keeps getting jacked up on us on a fairly regular, maybe even exponential, basis. And I think that’s something that’s peculiar to our time. I don’t think our grandparents had to live with that.

- Interview with William Gibson from the documentary No Maps For These Territories (Neale, 2000).

There is no doubt the manifestos of the Futurist period are forever intertwined with the reckless zeal of the fascists across Europe as the modern world marched toward the inevitable horror of the First World War. Yet within the poetry, manifestos and paintings of the period was an attempt to grasp the “axe” of change to scuttle the academics, the alchemists, the museums and the “superficial and the banal” and proclaim a new era free from historical romanticism. This is a familiar mantra which has a strong resonance in the marketing of technoculture in the new millennium. Just as the industrialisation of society and the electrification of the city ushered in a new era of transport, architecture and technological achievement so too does the networking of information and the digitisation of cultural production signify a new break from the past.

The celebration of speed and technology also brought into question the social and cultural implications of these powerful new forces and their influence on our present and past narrative constructions. Unintended cultural and social interventions exist within the celebratory parade. In her 2003 text, The Futurist Moment, Marjorie Perloff makes the unsettling link between Robert Delaunay’s 1914 chromatic painting Homage to Blériot (1914) and the ghostly internet images of falling victims and the circling airliners on the morning of September 11. Delaunay’s work celebrated Louis Blériot’s flight across the English Channel and according to Perloff
was “a semi abstract colour field of overlapping and interlocking disks... into this vibrant prismatic field, he placed recognisable images of airplanes, propellers, wheels, birds, and a miniature Eiffel Tower” (Perloff, 2003).

The atmosphere and the energy of mechanical flight is evoked through colour, shape and symbol, as Balla would write in *Futurist Reconstruction of the Universe*, his own study of speed and sound; “We will give skeleton and flesh to the invisible, the impalpable, the imponderable and the imperceptible. We will find the abstract equivalents for all the forms and elements of the universe, and then we will combine them according to the caprice of our aspiration, to shape plastic complexes which we will set in motion” (Balla & Depero, 2009). Delaunay links his style of chromatic painting with the symbolism of light and nature infusing this approach with the technology of human flight, describing the scene as the “constructive mobility of the spectrum: dawn, fire, evolution of airplanes.” The Eifel Tower small as it was and most likely representative of the high esteem for which Delaunay held the feat of human flight in *Homage to Blériot* he managed to grab the dynamics of the biplane and the atmosphere of a city dominated by the Tower and fit them triumphantly into the frame. This was the realisation of the challenge he had set himself with his earlier *Eiffel Tower series* (1909–14) where he attempted to depict the monstrous configuration of iron in concert with the surrounding Parisian city. As writer Blaise Cendrars observed of Delaunay’s struggle with the Tower:
No formula of art, known at the time, could make the pretence of resolving the problem of the Eiffel Tower. Realism made it smaller; the old laws of Italian perspective, made it look thinner. The Tower rose above Paris, as slender as a hat pin. When we distanced ourselves, it dominated Paris, stiff and perpendicular; when we approached it, it bowed and bent over us... And those thousands of tons of iron, those thirty five million bolts, those three–hundred metres high of interlaced girders and beams, those four arcs with a spread of a hundred metres, all that vertiginous mass flirted with us (Cendrars, 1962).

The image of a plane and a vertical superstructure then can be seen as conceptual bookends of the 20th Century. As Perloff noted, it is hard to imagine that the sight of a biplane circling the Eiffel Tower in 1910 would soon be a weapon of war and that the Eiffel Tower itself would be the object of desire for an advancing German line in WWI. However, as remote as these events may seem at first the image of plane and building, the victor and the vanquished, would come to represent a period of dark uncertainty in Europe and nearly one hundred years later in America and the West as the visual relationship was thrust once again into view. This would become a familiar trope as the century of human flight, the velocity of man and machine, the networking of electronic communications and the American fetish for speed, height, size and specifically – the skyscraper – would slam up against each other with increasing regularity. In 1933 the aeroplane was used as a weapon to punish the insurrection of a giant gorilla that had trespassed into man-machine vertical space in the film King Kong. Although in a fictitious fantasy, the image of a gigantic gorilla fending off American fighter planes is a powerful signification of not only cinema’s depiction of man’s triumph over

---

83 The significance of the payloads aboard the United Launch Alliance’s Delta IV rockets must be acknowledged in this context as the Missile Defence Agency’s Ground-based Midcourse Defence system include what is known as a “Kill Vehicle”. This is the component of an interceptor rocket that is designed to destroy an enemy object – usually at near Earth orbit - on impact. Here the militarisation of space and the dreaming of Star Wars era missile defence systems merge into a very real and very expensive gothic high-tech assemblage.
nature, but of technology’s ability to dominate the sky and perhaps most tellingly, technology’s ability to dominate the narrative construct. This technique was used to great effect three years earlier in Howard Hughes epic war film, *Hell’s Angels*, which brilliantly evokes the mechanical dexterity of the fighter planes of the WWI era. The imagery features planes in complex acrobatic manoeuvres simulating not only the technological feats of the WWI aerial combat but also Delaunay’s sweeping circular motifs and representations of the mechanical object. In *King Kong* however, technology acts as both a symbol of human invention and the lure to which “the beast” is finally destroyed, not by the bullets from the fighter planes, but from falling off the world’s tallest building. The image of the planes taunting King Kong as he attempts to protect Fay Wray atop the Empire State building is also evocative of the pastiche of circular and vertical imagery – of man, machine and steel which Delaunay created in 1914. Yet the film’s conclusion produces a sentimental foil for the techno–mechanical symbolics as the narrative deviates from the Futurist manifesto of technological supremacy to the true motivations of King Kong’s actions that are formalised by Hollywood’s romantic ideology which necessitates saccharine closure. Standing over the giant corpse a police officer approaches Denham, the –adventurer who captured King Kong and transported him to New York and remarks: “Well Denham, the airplanes got him,” to which Denham replies, “Oh no, it wasn’t the airplanes that got him, it was beauty killed the beast” (Cooper & Schoedsack, 1933).

Here the image of the vertical has been enhanced by the fantastical depiction of King Kong atop the Empire State; our framing of the action is always a long shot of Kong with the rest of Manhattan stretching towards the horizon, dwarfed not by the gorilla, but by the imposing scale of the building. The film that was at its core about a lovesick oversized gorilla became instead an exposition of a hallowed site. In black and white, (more so than the 1989 colourised re-release) this jerky nostalgic footage is especially evocative of the parade of iconic Futurist and technological imagery in early cinema; especially in the American context. However, it is this image of the towering skyscraper and the swooping bi–planes which haunt our contemporary point of view. Perloff alludes to September 11 as the most unlikely of manifestations of the airplane – as a weapon of mass destruction – and seemingly so far removed from the small fragile bi–planes of Delaunay’s 1914 work. Although these planes would deliver their own payloads of death and destruction in the approaching Great War we could not have envisioned that nearly a century later a plane “carrying no arms whatsoever” could deliver the devastation as was witnessed on September 11. Yet Perloff observes that the scene in this context – the photographic image, the chance video document – show little of the drama which would ensue, instead “The sky is light blue, the horizon line a soft pink, and the plane, still in the distance, looks like a graceful bird. How, one wonders, could this small and delicate machine destroy a high and mighty tower?” (Perloff, 2003).
What this act does of course is end the fascination with the manmade vertiginous space and the romance of flight. This is a history that began in the late 1880s with the wires that carried electricity and the towers that broadcast radio waves and continues today with the satellites that link our popular cultural products and our most intimate conversations. A narrative that includes images that resonate with our heroic relationship with the sky: from Modernist icons such as the Eiffel Tower, the Red Baron and the Empire State Building to technological achievements such as the Apollo Missions, the Concorde jet, the construction of the World Trade Centre and the boldness of the Space Shuttle. This is a vision that also includes the inverse of the triumphant vertical aesthetic: the Blitz of London, the obliteration of Hiroshima and Nagasaki, the propaganda leaflets floating like confetti after the napalm in Vietnam, phosphorous bombs in Palestine, drone strikes in the Middle East, rogue comets in northern Russia and acid rain in Germany. The technical accident of our pursuit of flight and mastery of the skies is a complex and multi-faceted narrative with many unintended consequences including those which were stage managed for the most hideous of technological ends. The ultimate
consequence of course, is our retreat from this space. The defeat of the horizon line and the internalisation of what may or may not exist “out there” is the most troubling consequence of all.

It bears remembering that at the World’s Fair of 1939 the residual perspective was down and inward – down – upon a reimagining of the land which had beared so little fruit for America during the Great Depression and inward into a bourgeoning consumer ideology. While the Perisphere and the Tylon dominated the skyline of the Flushing Meadows site in New York, the auditoriums and museums featured dioramas and films with a distinctly top-down perspective: the submission of the landscape to the highways and urban grids of Norman Geddes and General Motors; the streamlined aesthetics of trains, and telephones and decanters of Henry Dreyfuss; and the super charging of the domestic space with “tiny robots” of Chevrolet and Westinghouse. The World’s Fair of 1939, at the dawn of the Second World War, was the beginning of the great move away from the skies. It may have offered redemption from the toil and listlessness of the Depression years but it brought with it a more totalising anxiety as the heavens began to conjure a trauma of an altogether more horrifying vista. In just a few short months, Germany would invade Poland and commence bombing its citizens from the sky and by September 1940 the German Luftwaffe would unleash the Blitz over London. Allied bombings too would escalate, as Hamburg and Dresden would come under British, French and American raids. Eventually, with Japan’s assault on Pearl Harbour, the Americans would bomb Tokyo and ultimately take the radical step of using nuclear weapons on a civilian population in Hiroshima on the 6th August 1945 and then three days later in Nagasaki. The firestorm incarnate. The war was over but the trauma from above had only just begun.

1939 also marked the time when “the last Futurist” Tulio Cali, pointed the nose of his plane down towards the cityscape below and unwittingly constructed the most iconic of Steampunk

![Figure 220 Tulio Cali's Nose Dive Into the City (Cali, 1939).](image-url)
images, *Nose Dive Into the City* (Cali, 1939) (see Figure 220). Having joined the Futurist movement quite late in 1929 he subscribed to the *Aeropittua* sub-field of Futurism which Marinetti launched in the *Manifesto of Aeropainting*: “The changing perspectives of flight constitute an absolutely new reality that has nothing in common with the reality traditionally constituted by a terrestrial perspective” (Balla et al., 1929, pp. 283-284). And while this was a celebration of all things flight and the mechanics and aerodynamics of the machines which made it possible – “the immense visual and sensory drama of flight” – the orientation towards the ground, the perspective of flight with the earth stubbornly looming in the periphery defines the most dazzling of the works which would follow. As Laura Cumming notes from her 2005 review of the London exhibit, *Futurist Skies: Italian Aeropainting*:

The view from above was not uncommon in Italian art. The city seen from the hills appears in Roman images and Leonardo, of course, had exploited the quasi-aerial view. But nothing quite lifts off until the plane does, and some of these paintings simply revel in the astonishing sight of the earth. The classical arena of Verona shrunk to a bowl as Alfredo Ambrosi’s plane wheels; Mario Molinari’s Gulf of Hammamet turned into an intricately patterned abstract, spangled with sunstruck waves, an image surely dashed off from the actual cockpit (Cummings, 2005).

Here too, hanging between two World Wars, is the iconography of a future–past construct: the legacy of the Futurist’s Fascist cheerleading and the visual iconography of a new technological suprematism that would deliver a much more sinister cargo in the coming decade. Michael Glover observes this “destructive bombast” emerging in *Domenico Belli’s Pausing in Space* (Belli, 1935) (see Figure 221), in which the dichotomy of art and politics is seen to be undergoing a fervent renewal: “Two hooded aviators, floating in an aestheticized space, have the alarming, indomitable majesty of roman legionaries, intent upon embodying some relentlessly imperious – and imperial – view of modernity. A terrible, nightmarish beauty is being born” (Glover, 2005). The association of strong military tropes accompanying the promotion and zeal for technological invention is marked – especially of flight, of that which lies beyond our knowing, in the clouds, amidst the stars, beyond the limits of control.

---

84 The aesthetics of this image is indeed thrilling and it has been mimicked and adopted by many for its evocative composition and nostalgic tropes. Yet in a contemporary sense its original creation and moreover its recent exhibition in London in 2005 has courted controversy, as Jonathon Jones bristles in his Guardian review from that year: “At first sight it seems simply a manic futurist poem to speed and danger as the plane we are in hurtles straight down into an abyss between mighty skyscrapers – a stunning piece of aerobatics, a splintered dream of modernity in motion. But again it’s worth checking the date of the picture. It was painted in 1939. Who, in 1939, would have got this kind of view of a city, if not the pilot of a Stuka dive bombing an east-European city? Is there really any doubt this painting praises the dynamism of the Blitzkrieg?” (Jonathon Jones, 2005).
Thus continues a vast damning catalogue of late 20\textsuperscript{th} century widescreen broadcast image loops which associate manned technological flight with the weaponry of war and scientific fantasy. “An out of frame off–screen art, or more exactly a tilt–up, in which the virtual would win out hands down against the actual” (Virilio, 2007, p. 81). Notions of falling abound: the ground racing up towards us, and of the vertiginous forms collapsing down. These are large and confronting in scale as if their enormity signals a warning of a deeper more totalising anxiety in the fabric of rational human endeavour. The mastery of physics and technological engineering put us there and the limitations of that mastery bring us quite literally back down to earth. The aerologoical catastrophe runs deep, the Hindenburg disaster in 1937 is catastrophe in slow motion, catastrophe on camera. Similarly the Challenger disaster in 1986 was also in slow motion, but for different reasons – only upon reflection do we perceive the instant that disaster strikes.

The Challenger disaster brought home a shocking reality to a contemporary audience for whom the techno–futurist signification of NASA was a comfortable vista of space dreaming. After all Star Wars was our cool western comfort zone, the fantasy of our making, a nuclear sky–net fit for the Reagan era while Stallone, Cruise and Schwarzenegger held the Cold War barbarians at the gate on the ground below. Human endeavour and technological progress were wedded together in the iconography of NASA and its quest for the stars. The Apollo mission’s successes and near misses were all symbols of humankind’s ability to master technology and overcome its failings. But the Challenger disaster according to Virilio was, “the original accident of a space shuttle, a sign in the sky” and became a defining chink in our romance with space (Virilio & Lotringer, 2005, p. 104). This was a very tragic and very visual departure from the cheerleading of the techno–futurist narrative – a technological accident at the dawn of the computer age. Up until that point the narrative of NASA had ensured we were still enamoured with the majesty of the Shuttle launch, not necessarily looking
up at it specifically, but at a mediated view from the bulbous cathode ray tube, the first domesticated screen.\textsuperscript{85}

In January 1986 Challenger broke that spell. The moment is chillingly recorded in the raw footage captured by a CNN cameraman who was posted at the viewing decks at Cape Canaveral.\textsuperscript{86} As the camera whips around a crowd predominately made up of friends and family members of those on board, school children and their teachers, it is not immediately apparent that something has gone wrong at the point of the Shuttle’s initial explosion. Like a circus act that has gone horribly wrong the billowing smoke masks the tragedy within. Many in the crowd still clap and cheer as the vehicle disintegrates and the booster rockets separate and spiral back towards the earth. However, as the minutes pass it becomes clear from the announcement over the public address system, “that the vehicle has exploded”, and that an awful tragedy has taken place. One of the most enduring images of the Challenger shuttle disaster is not the shuttle at all but the grief stricken faces of astronaut Christa McAuliffe’s parents, Grace and Ed Corrigan, who realise their daughter has perished before their eyes (see the 1\textsuperscript{st} column \textbf{Figure 222}). This sequence of images and the accompanying audio is as powerful and confronting as any of those recorded on September 11 when onlookers and office workers are documented at close range watching the tragedy unfold in the streets surrounding the World Trade Centre as once again a peaceful blue sky is ruptured by tragedy (see 2\textsuperscript{nd} column \textbf{Figure 222}). These image sequences are the original documents of mediated grief and collective mourning. Some of the last humans to look up at the unravelling of the techno–futurist narrative – the mass turning away from the skies firmly takes hold during this period. As if to reinforce this idea, these images continue to be re–broadcast over and over, recreated again and again, referenced and reproduced in documentaries and feature film production ad nauseam. These are the faces that feature so prominently in my key work, \textit{My Endless Dystopian Summer Blockbuster} (Goodwin, 2011d) the simulated performance of grief (see 3\textsuperscript{rd} column \textbf{Figure 222}). Sampling feature film director’s use of the human face to convey the scale of the horror they are witnessing, the assemblage was projected on opposing walls of the gallery – the audience watching the performance of the performer watching the end. These are the conduits between the real and the

\textsuperscript{85} Figures for the 1986 launch of STS–51–L Challenger indicate that a staggering 17\% of Americans watched the launch of the shuttle. Many of these viewers were school children who were watching the launch in TVs in classrooms across America in support of Christa McAuliffe the “first teacher in space” and one of two women who were on board. (Boulder Channel 1, 2011) The Challenger disaster was also syndicated globally via CNN which by the mid–1980s had begun to establish the 24hour news cycle and helped to make the Shuttle disaster a truly global event (McNair, 2006, p. 108).

\textsuperscript{86} A broadcast recording from 1986 of a post-disaster CNN studio analysis was uploaded to YouTube in 2009.
The real and simulated emotions of the technological accident (1st Column) VIP guests watch the Challenger shuttle launch, Christa McAuliffe’s parents 2nd from top (CNN, 1986) (2nd Column) Onlookers watch the events unfold on September 11, 2001, image credits from top (AP Photo & Mor, 2001) (Witty & Time Inc, 2001) (Franco & Times, 2001) (Platt & Getty Images, 2001) (3rd Column) Still frames from the video assemblage, My Endless Dystopian Summer Blockbuster (Goodwin, 2011d).
Imagined catastrophe, these are the barometers by which we measure grief and tragedy. In the end, the legacy of the technological accident is the mass produced mediated tears and grief stricken expressions of those of us unfortunate enough to witness the events first-hand and then have our likeness – caught in that moment looking up – broadcast to the world. Little wonder we choose to look away.

In April 1986, only months after the Challenger disaster, the explosion at the Chernobyl Nuclear Power Plant reinforced the notion of the technological accident and heightened Cold War fears of the invisible dangers of radiation. It also represented the crumbling of any credible alternative political power to that of a primarily U.S.–western democracy. The Chernobyl disaster revealed the fragility which existed beneath the bravado and the cost of the arms race with the U.S. and would background the political instability which eventually precipitated the fall of the Berlin Wall. And in turn we are presented with a site of absence. Two narratives stepped into this vacuum: the techno-cultural narrative which was now free to market a utopian future as a corporate ideal and the inverse of this mantra which was a subversion of this promise and best expressed by Hollywood’s exploitation of a suspicion and a mistrust of technology and its associated network operations. The absence of a Cold War foe created an acceleration of the mostly western 20th Century’s will to techno-futurism and the trepidation in the fictions that such acceleration engenders. Here concepts of the networked computer, the web, artificial intelligence and virtual reality are merged with a naïve understanding of data and information and its visual representation.

These sorts of assumptions about information are typically accompanied by their own depictions of data–space, which has been surprisingly consistent through Hollywood’s depictions. Hyperactive, neon, unexpectedly graphical, punctuated by blips and bleeps and always scrolling, fast–typed text, the Internet is dangerous, exciting, and cutting–edge (Bianconi, 2013).

During the early to middle period of the 1990s Hollywood struck a rich vein of netploitation cinema with films such as Lawnmower Man (Leonard, 1992), Sneakers (P. A. Robinson, 1992), Disclosure (Levinson, 1994), Johnny Mnemonic (Longo, 1995), The Net (Winkler, 1995), Hackers (Softley, 1995), Strange Days (Bigelow, 1995), Virtuosity (Leonard, 1995), Ghost in the Shell (Oshii, 1995) and GoldenEye (Campbell, 1995). Significantly, prior to the year 2000, there was another important sequence of dystopian narratives which featured exposes on technological surveillance, rogue agents, network subversion and dark virtuality: The Truman Show (Weir, 1998), 23 (Schmid, 1998), Enemy of the State (T. Scott, 1998), The Thirteenth Floor (Rusnak, 1999), Virus (Bruno, 1999), Existenz (Cronenberg, 1999) and The Matrix (Wachowski & Wachowski, 1999). Most feature big budgets and all are bombastic experiments in the appropriation of identity and the visualisation of a
hidden “other” lurking inside the network which appeared during a relatively short period at the close out of the millennium (1997–1999). Part conspiracy, part paranoia these films articulate the uneasy relationship with technology and networked information that was being peddled by the corporate entertainment industry and the burgeoning web scene of conspiracy sites which were beginning to take hold in the late 1990s.\footnote{For an account of the emergence of conspiracy theories, technological paranoia and gossip in the age of the network see Clare Birchall’s \textit{Knowledge Goes Pop: Conspiracy Theory to Gossip} (Birchall, 2006), and Jesse Walker’s recent \textit{critique, The United States of Paranoia: A Conspiracy Theory} (Walker, 2013). While well beyond the scope of this study, it is of some relevance that the contemporary undercurrent of paranoia and suspicion surrounding technology as agency of government and covert anti-government operators has its roots on the web. The recent publication of the NSA files procured by former employee Edward Snowden in \textit{The Guardian} and \textit{The Washington Post} gives much credence to this suspicion.} The dangers of information and the exploitation of network technology for nefarious ends becomes the new simulation of the forthcoming Cyber City. As the wall between East and West came down the window to the network went up online producing a new paradigm of paranoia. No longer was threat about external forces and the anxiety of the skies and the weapons of terror a foreign nebulous construct. This anxiety would now come from within. This state of affairs being especially evident in the conspiratorial narratives surrounding the crash of TWA Flight 800 in 1996 which followed a clutch of films examining the hidden darkness in the network which had played to big audiences over the previous summer.\footnote{In 1995 there were no less than six Hollywood films which dealt directly with hacking, computer virus, network espionage, these included \textit{Johnny Neumonic} (Longo, 1995), \textit{The Net} (Winkler, 1995), \textit{Hackers} (Softley, 1995), \textit{Strange Days} (Bigelow, 1995), \textit{Virtuosity} (Leonard, 1995) and ultimately \textit{GoldenEye} (Campbell, 1995).} Here the paranoia of the unseen and the invisible motivations of dark actors became the main players in a feverish examination of the possible causes of what seemed like a fairly innocuous routine flight from New York to Rome. The suspicion from within. This is also true of the intense forensic examination of the photographic and video documentation of the events of September 11 some five years later. Again the darkness lurks within. Some of it imagined some of it real all of it funnelled through discussion forums, YouTube playlists and blog sites of the web. As we turned to the screen and constructed new horizons through the virtuality of the web the romance of Modernity’s flirtation with flight was coming to an end. We instead place emphasis on the disintegration and destruction of Modernity. By highlighting the accident we give substance to the catastrophe. As Virilio points out, it was the design of the World Trade Centre which precipitated its downfall and gave substance to the image loop as performative act:

The accident reveals substance. We could replace the word \textit{reveal} with the word \textit{apocalypse}. The apocalypse is a revelation. The accident is the apocalypse of substance, in other words, its revelation. To put it another way, the revelation of
Figure 223 *Ground Zero* by Doug Kanter and promotional footage for *Crysis 3* (Reuters, 2001) and (Electronic Arts, 2013).

Figure 224 Lois and Perry flee the falling office block in *Man of Steel* and WTC dust cloud (Snyder, 2013) and (Associated Press, 2001).

Figure 225 *The Dark Knight Rises* and the façade of the World Trade Centre on 9/11 (Nolan, 2012) and (AFP & Getty Images, 2001).

Figure 226 Promotional collateral for series six of *Mad Men* and Richard Drew’s image of The Falling Man on 9/11 (Weiner, 2007) and (Drew & Associated Press, 2001).
the World Trade Centre was its suffering as a performance. It was extraordinary to build twelve hundred feet without a structure, with a simple steel weave. But this performance came at a price of an unprecedented catastrophe (Virilio & Lotringer, 2005, p. 107).

The performance of a falling building. The performance of jet airliners colliding with buildings. The performance of the lived experience of the eyewitness. The unscripted catastrophe as news broadcast. All of these forces driving perspective downward. What follows then are representations of the real simulated in the high definition dreamscape of mass entertainment willing the next apocalyptic moment into being. Simulations of iconic moments of well documented tragedy are writ large across a range of pop cultural image scapes blending historical memory with a digital fetishization of the end times. The signifiers are numerous, there optical links to the trauma of the real and the technological accident are brazenly familiar. The post–apocalyptic landscape of Crysis 3 (Crytek Frankfurt & Crytek UK, 2013) is certainly designed on the shredded steel weave of the Twin Towers, while the fractured office blocks in Battlefield 4 (EA Digital Illusions CE, 2013) are reminiscent of the towers before their eventual demise – broken, fractured, bleeding. This is also evoked in the desolate landscape of Wall–E (Stanton, 2008) and the crumbling cityscape in the opening sequence of Elysium (Blomkamp, 2013) each of which are cinematic revivals of the fractured World Trade Centre complex prior to its collapse. Yet it is the inner dreamscape of Dominick Cobb, the character played by Leonardo DiCaprio, in Christopher Nolan’s epic simulation Inception (Nolan, 2010) that is September 11’s most haunting replication. In a pivotal scene in which Cobb returns to the dreamscape he has been constructing in his mind, the entire coastline that demarcates his inner subconscious world from the induced virtual world is an enormous cluster of collapsing buildings, their foundations corroded by lashings from the sea, as they topple and crumble into the ocean of Cobb’s memory. What lies behind them is a dense vertiginous horde of twin towers standing shoulder to shoulder crowding out the horizon line with their endless hulking shadows.
Symbolic iconography is on display in the promotional material for *The Dark Knight Rises* (Nolan, 2012) and the billboards advertising the 5th Season of the TV series *Mad Men* (Weiner, 2007-2012) (see Figure 226). The act of the collapse, the falling building, the falling man, the crumbling edifice and the crumbling mind are all present in a litany of assaults on the cityscape including *I Am Legend* (Lawrence, 2007), *Cloverfield* (reference, 2008), and *Pacific Rim* (del Toro, 2013). The city depicted as a war zone is increasingly exploited in films such as *Battle: Los Angeles* (Atkins, 2011), *The Avengers* (Whedon, 2012) and the *Man of Steel* (Snyder, 2013). This motif also crops up in games, most notably *Call of Duty: Modern Warfare 3* in which Manhattan is the setting for a fictitious conflict between Russia and the United States and Paris becomes a second nostalgic battlefront in which an allied airstrike cripples the Eiffel Tower sending it toppling into the Seine (Infinity Ward & Sledgehammer Games, 2011). The visual cues of the dark euphoric simulation are all present in these visual constructs – the clouds of dust, the ghostly silhouettes of onlookers, the frozen panic, the Spielberg face, the dash for cover – the thrilling embrace of the big screen disaster epic and the immersive first person shooter have been seared onto the screen in a chilling recognition of the original performance. It must be remembered, these are carefully constructed simulations. This is the vantage point that provides a privileged high-res point of view of the original lived experience. An epic “redo” we never previously had but most certainly craved and until now could only have ever understood from the horror etched into the faces of those who were there. These examples are significant as they are not simply marginally successful console games or obscure cinematic moments viewed in half empty theatres or on late night TV, these are some of the largest global entertainment products of the last decade with enormous audience share and cultural influence. If the decade leading up to the millennia is characterised by narratives which question technology and virtuality – the unseen – then the decade that immediately followed is a replay loop of a tragedy that is familiar, that is understood, and that we patently dread. The fact they feature such evocative imagery of catastrophic scenes of urban destruction and the failure of technological flight and so obviously draw their design template from September 11 mark them as some of the most extreme expressions of the neo gothic narrative in contemporary millennial culture.

So what is going on here? Is this the re-enactment of history for the purposes of commercial exploitation and titillation or something deeper? Is the big picture cinematic event – the high resolution image production of an act of extreme violence - the only language the West understands? Are these image constructions part of a viral image loop of the end times rendered as fantasy but presented as hyper-real flashback? Is this therefore a conscious mechanism we use to re-affirm the warning that was September 11?
Sakia Sassen writing in *The Guardian* on September 12 2001 in her article “A Message From the Global South” controversially observed that it is a problem of understanding, of interpreting the signs prior to 9/11 that brought the event into being. That what the world witnessed that morning was the most dramatic of translations in a cinematic language that could specifically be understood by all who saw it:

Part of the challenge is actually to recognise the interconnectedness of forms of violence that we do not view as being connected or even forms of violence. We are suffering from a translation problem. The language of poverty and misery is unclear and uncomfortable. The language of yesterday’s attacks are clear… We may think that the debt and growing poverty in the south have nothing to do with the violence in New York and Washington. But they do. The attacks are a language of last resort: the oppressed and persecuted have used many languages to reach us so far, but we seem unable to translate the meaning. So a few have taken the personal responsibility to speak in a language that needs no translation (Sassen, 2001).

And so what is left is not only the endless repetition of violence but the recurring symbolic image of that violence reconstituted and embedded into the image stream of mass popular culture. While the actual ongoing history of violence – of America and of the World - plays out alongside this fantasy with real violence and real horror in the hills of Afghanistan and Pakistan and on the streets of Baghdad, Yemen and beyond.

Numerous media artists and experimental film makers – on a much smaller and more intimate scale – have also explored the iconography of September 11 and the anxieties embedded in notions of flight, falling and extreme violence. Edouard Salier’s short film *Flesh* (Salier, 2005) is an animated rendition of New York on the morning of September 11, 2001. A sunny chrome vista, the Twin Towers still glisten in the distance, the surfaces of the buildings are draped in pornographic imagery; mostly women with other women (see Figure 228). The imagery is framed provocatively, the camera moves voyeuristically across the gleaming surfaces, the colour values are bumped up to accentuate the fleshy tones, the lipstick, the lurid tongues and the vital extremities. Salier asks in the opening title card:

The empire unveils everything but sees nothing,  
Its enemies idealize everything but tolerate nothing,  
For some the earthly orgasm of virtual whores,  
For others the eternal orgasm of 70 heavenly virgins,  
What if it all came down to flesh? (Salier, 2005)
As we descend into the city we hear the audio of an approaching plane, and then in an angle reminiscent of that first freakish glimpse of the first plane hitting the south tower, Salier reimagines the moment with the black silhouette of a plane smashing into a towering wall of naked flesh, vector spikes of animated blood bursting like shards of red Perspex from their glistening frames. And then a second plane, the audio is now distinctly familiar lifted as it were from the live broadcast of the original event. The colour palette of Salier’s work seems to echo eyewitness accounts of September 11 who speak of red, blood red, and bright flashes of orange: “All of a sudden...BOOM! There was a huge explosion. I never saw anything so red in my life. It was red like blood, like anger. It felt like it was coming through me, it was so powerful. I had just been sitting where it hit.” (Manis, 2011) As the camera surveys the damage we hear the engines of a helicopter – we are in the helicopter – the camera tilts and shakes drifting in and out of focus, red splinters and diamond sparkles everywhere. A layering of voices swell from below: shell-shocked news commentators, the screams of panicked onlookers, all the while the women continue to gyrate, caressing their perfect flesh, pouting, sucking, licking and sinking into the grid as the towers collapse. And then there are more planes, many more planes. One after the other they slam into the New York skyline, the Statue of Liberty frozen in the foreground as the city crumbles.
into the fleshy landscape. This is a violent disturbing sequence, the planes in their multiplicity and their featureless black silhouettes are eerily evocative of those on September 11 – the noise of the engines their black hulls hurtling through the skies above is genuinely confronting in a darkly comic and absurdist play on our memories and prejudices. And yet, what the colour palette and art direction remind us of is not sex at all but of money, of capital and sleaze and of gold bullion and manufactured power. Ultimately power is corruptible and the end is never far away, here the flesh and the glass and the gold return to dust and sand and molten form. Lady Liberty however, remains intact. She watches the tawdry scene from a safe distance as the planes exact their fanaticism on American eroticism. *Flesh* is a blunt confronting critique of the offices of power, the broadcast image loop and female exploitation.

*Dwelling* (Sawa, 2002) by Japanese graduate student Hiraki Sawa was produced in his London apartment in the direct aftermath of September 11. It is a deeply meditative piece, Ken Johnson of *The New York Times* has described the work as “understated domestic surrealism” (Johnson, 2006). The movement of the aircraft is slow, controlled, systematic – predictable. Nothing like the erratic and unexpected behaviour that characterised the flight paths of the planes hijacked from Boston, Dulles and Newark airports the preceding Autumn. As art critic Gregory Volk observes, “As one watches this slow and stately, yet frequently chaotic, pageant of Boeings, Airbuses, Concordes, jet planes trailing smoke plumes, and commuter craft, the incessant migratory force of airplane travel in an increasingly globalized era is not something occurring out there, in the great skies, but right here, in a cramped London flat.” (Volk, 2005) For Sawa the orchestration of the
model planes across the planar of the still background images of his modest apartment is about order and controlling time. The methodical fashion in which the planes arrive and depart from their designated locations gives a sense that somehow here in this domestic space of flows the machine is contained, that the timeline of events is as predictable as airport codes and flight numbers. The opening image is of the external walls of a block of London flats, certainly not the imposing skyline of Manhattan, but an establishing shot with an eerie sense of foreboding nonetheless. Once inside the camera holds on a view through a bright and sunny window, in any other decade it would be a contemplative image, but here in this place, the model planes at their respective depots waiting for their flight clearance, it is a fearful glance up at empty skies. We see the dwelling from the inside: the bedroom, a kitchen, the lounge and the bathroom. And then we are watching the planes. They are rhythmic, they have form, they throw a shadow, and despite their size we feel their weight and the tone of their engines. They come in low overhead, they fly close to walls, through barely open doors and circle precariously close to the ceiling and light fittings. It is a melancholic affair. At several points towards the end there appears to be maybe twelve or fifteen planes sharing the air space in the hallway and the lounge, in a slow hypnotic dance. The end is close, but it will not be calamitous in this ordered space, the dwelling contains the weight and energy of the simulation.

While Sawa and Salier’s work deal with the technology of flight and the aesthetics of the machine, Fabio Giampietro – like Tulio Cali before him – is enamoured with the perspective that flight permits. A visual artist working out of Milan, Giampietro’s tightly wound cityscapes are seen exclusively from above looking

Figure 230 Hiraki Sawa’s short film Dwelling (Sawa, 2002).
down. They articulate the great fall back to earth in a manner which recalls Cali’s *Nose Dive Into the City* (Cali, 1939) and the spiralling fall of the aircraft at the end of King Kong (Cooper & Schoedsack, 1933) with an almost comic book exaggeration of the city as descending vertical space (see Figures 231-232). And while Sawa’s work internalises the anxiety of the industry and systems of aviation, abandoning the scale and velocity of mechanised flight, Giampietro’s *Vertigo* series in particular (Giampietro, 2010-2013b) embraces this with verve. His twisted and exaggerated interpretation of the cityscape exemplifies the power of the bird’s eye view; like a vortex the Cyber City sucks us into its ordered compartmentalised hive. On Giampietro’s flight deck the pull of the dark euphoric ride is immensely swift and enveloping. His *Metromorphosys* series (Giampietro, 2010-2013a) adopts a texture reminiscent of Escher and the expressionistic darkness of Edvard Munch, taking the contemporary Futurist oeuvre on a deliberate and totalising nostalgic fall – back to earth, into the grid, amidst the steel, concrete and glass. This of course is the ride we want to be on. As Marinetti and co. declare in the *Manifesto of Aeropainting*, the plane “creates an ideal hyper-sensitive observatory suspended in the infinite, further dynamized by the very consciousness of motion which changes the value and rhythm of minutes and of seconds of vision-sensation” (Balla et al., 1929, p. 284).

In this space we see the “vision-sensation” in the convergence of both the anxiety and the audacity of technoculture; the look from above, the peek over the edge, the stepping off. Think of the Burj Khalifa tower in Dubai. This beacon of engineering genius

---

**Figure 231** Fabio Giampietro’s *Metromorphosys* series (Giampietro, 2010-2013a).

**Figure 232** Fabio Giampietro’s *Vertigo* series (Giampietro, 2010-2013b).
springing from the Arabian Desert like a dream, an exotic flirtation with the past and a statement about the future, mocks the West. But still we look down upon it; the Western world’s dominant view of the Burj Khalifa is down. Tom Cruise blew holes in its side, grappling with its monstrous height only to plummet down its glass walls the camera motoring behind him in *Mission: Impossible – Ghost Protocol* (Bird, 2011) - a startling sequence that framed the streets and boulevards of Dubai below in a manner reminiscent of Delaunay’s *Eiffel Tower* series a century earlier (see Figure 223 Left). BASE jumpers leap from its pinnacle and suicide jumpers tumble down its exterior. The building has a vertigo inducing observation deck, on the 124th floor; you go there to look down. It also has a digital telescope which displays an augmented view of the city at different times of the day and from different times of the year. A virtual 360 degree view of the world below – the vast desert metropolis as simulation. To be underneath such a structure is to be intimidated and disorientated, to look down from the observation deck is to understand the power of doing so, to feel the compression of Zygmant Bauman’s space and time. The human mind doesn’t really comprehend this view of the world, this is a machine perspective. This is personified by the Burj Khalifa experience. Here on the end of this gigantic celestial pin, you are everywhere and nowhere at once. But it does contradict Bauman’s notion of a non-existent “special value”, that the ability to be everywhere at once is reductive. In fact, walking on sheets of reinforced glass panelling 800 metres above the manicured landscape below values perspective and knowledge above all else.

This is a privileged machine-like vision – for the CCTV camera, the drone, the flight simulator, Spiderman. For the uninitiated this is as much a fantasy as anything we could imagine on the ground. And so, we go there without seeing, we leave behind that which is not understood, a riddle for our ancestors – an archive of absent meta-data. The trauma of the real, the drama of the fall propelling

Figure 233 Robert Delaunay’s *Tour Eiffel and Gardens of the Champ-de-Mars* (Delaunay, 1920) and Tom Cruise scales the Burj Khalifa in *Mission: Impossible – Ghost Protocol* (Bird, 2011).
us back down to the screenscape of the black mirror. But surely this is not good enough. If the iUser can navigate the network, but fails to understand its complexity then how can any of us confront something as reflexive as the image loop and as precarious as the fall from above? We must of course invest time; we must break it down to the frames within the sequence and open up perspective beyond the high-def limits of the gadget. As Benjamin Bratton notes in his critique of the perceived pseudo-wisdom of TED Talks:

At a societal level, the bottom line is if we invest in things that make us feel good but which don’t work, and don’t invest in things that don’t make us feel good but which may solve problems, then our fate is that it will just get harder to feel good about not solving problems. In this case the placebo is worse than ineffective, it’s harmful. It’s diverts your interest, enthusiasm and outrage until it’s absorbed into this black hole of affectation (Bratton, 2013).

The situation is helpless; a glitch in the quasi-historical techno-futurist narrative; that which scales tall buildings, teases the clouds, penetrates the stratosphere, which confronts the impossible reach of the stars exists only in an endless electromagnetic loop. Cinemeagrams, GIFs, YouTube clips, “best of” news highlights, memorial compilations and anniversary packages are the stuff of the mediated accident. This is the neo-gothic fate of the technological disaster as cultural memory. This is techno-futurism without the historical context. Since the Hindenburg disintegrated and melted towards the earth in Lakehurst, New Jersey in 1937 the visceral film broadcast is alarming viewing, even today. The swift unstoppable nature of the incident is genuinely horrifying – the fire’s ferocity and the speed at which the tranquillity of air travel, the most

Figure 234 The Hindenburg explodes, Lakehurst New Jersey, May 6 1937 (Associated Press, 1937).

89 The footage and audio combination which are commonly associated with the event is in fact an amalgam of film taken by Pathe Studios and Castle Films shot at the landing site. The audio recording was made by reporter Herb Morrison and engineer Charles Nehlsen for radio outlet WLS Chicago. Although the footage is regularly replayed with Morrison’s famous narration, Morrison’s dramatic report was actually never heard with the original newsreel footage in 1937.
relatively serene of air transportation methods, is so abruptly undone by the horror of the technological accident. The hysterical commentary of the lone broadcaster, Herb Morrison, caught completely unaware and unscripted is pure dark euphoria: “Oh the humanity!” (Morrison & Nehlsen, 1937). Morrison’s sentiments are present in a litany of eyewitness accounts recorded by correspondents, bloggers, citizen journalists and those unsuspecting few who are unlucky enough to be thrust into the theatre of disaster reportage. Of course the image coupled with the audio provides a familiar context – “the horror, the horror” – but the acknowledgement of the loss of life and the collective experience is one of radio’s most resonant live broadcasts. These voices are the helpless pleas which are commonly only answered by Gods and super heroes. The fabled ability of religious figures and the comic book heroes to bring salvation to mere mortals in the hour of their need has a long tradition in American culture. Western democracy’s safety net against the 20th century’s darker tendencies is often a colourful figure with special powers, most notably unassisted flight and super human strength. They give light and hokum respite from the anxiety of manned flight, machines of war, radiation fallout, the omen of intercontinental ballistic missile technology, and the more insidious – less visible – creations of physicists, engineers and computer programmers. Like Gods they wear capes, wield weapons, lanterns and boast bulging muscular forms. And like the Gods before them they are conflicted characters with a dark twisted ancestry. What these “super” characters represent beyond a clear articulation of a dark and troubled aesthetic in contemporary cinematic production design is an explicit haunting of their narrative motivations. They suffer from an inability to reconcile notions of the future with a plausible corporeal existence and therefore become isolated, alien, other. They are, of course, created of man, appearing amidst the authoring of another of the 20th century’s most fantastic enterprises – the domination of man over atom. A contemporary interpretation of Spiderman, of Batman or Superman cannot escape this. And as the gaze of their audience has diminished these characters similarly are afflicted by a particular type of looking away. They begin to look inward at themselves; at a particular type of creeping darkness. Doubt creeps in, their powers becoming more earthly, more ungodly – “For what purpose this struggle?” The evolution of their character arc is pure gothic high-tech: uncertainty about their unique gifts, their hard–won skills, their moral compass and their place in the mortal world. A familiar malaise for those of us who take human form, not so the super

---

90 The audio that is commonly associated with Morrison’s voiceover was recorded at a slower than regular speed making his voice sound shrill and high pitched. Herb Morrison had a much deeper radio voice; this has recently been restored and corrected. For more on the origins of the recording see a discussion thread by Michael Biel of Morehead State University here.

91 In fact broadcasting live audio was not permitted in the 1930s America. However the Hindenburg event was so significant and Morrison’s account so affecting that it became the first live event to be replayed as a coast-to-coast “live” broadcast the following day on NBC (Morrison & Nehlsen, 1937).
coloured super hero of early 20th Century American comic book fantasy. And so we have watched them on paper and on screen – especially on the mega–screen: the IMAX screen and the 3D screen – withdraw into a gothic corner of anxiety and self–doubt. The image of the super hero, the costume design, their disposition, the art direction of their environment and the challenges that besiege them and the Cyber City population they pledge to protect darken before our eyes (see Figure 235).

And surely, as the great megascopic narratives of the Dark Knight, The Amazing Spiderman and the Man of Steel it was the events of 2001 which demanded their intervention. Where was Superman – or Spiderman for that matter – on the morning of September 11 2001? Surely the occasion befitted their quasi supernatural brief. The Falling Man – the most well–known image of the “blow outs” attributed to photographer Richard Drew92 – needed one of them at least to swoop through the stratosphere and scoop him up in his arms and deliver him safely to the sidewalk. This moment

---

92 The New York City medical examiner’s office does not refer to those who jumped to their deaths on September 11 by the more common term, “jumpers”, as this is prescribed to people who knowingly go to work in tall high-rise buildings with the intention of committing suicide. Instead, forced to jump by the ambient heat and intense smoke, these victims are essentially “blown out” of the building (Cauchon & Moore, 2008).
witnessed by only a few but broadcast to the world in the *New York Times* on September 12 and in the highlight reels of the world’s nightly news broadcasts over the following 48 hours was then suddenly airbrushed from history. It was as if this one image frame was too much to bear. After the tears of the broadcasters and the horrified portraits of the ashen pedestrians and the image loop of two planes smashing into skyscrapers and then the ultimate crescendo of two monstrous constructions of steel and concrete and glass collapsing to the ground – in clouds of dust and smoke seen from space – amidst all this, somehow one image was too much to bear and labelled “distasteful, exploitative and voyeuristic” (Singer, 2006). The image of the falling man became the articulation of the loss of life that the dramatic video footage of the attack and the collapse could never communicate. And yet the duality of the event, Flight 11, September 11 the Twin Towers, was also explicit in the image. As Tom Junod wrote in 2003:

> The man in the picture, by contrast, is perfectly vertical, and so is in accord with the lines of the buildings behind him. He splits them, bisects them: Everything to the left of him in the picture is the North Tower; everything to the right, the South. Though oblivious to the geometric balance he has achieved, he is the essential element in the creation of a new flag, a banner composed entirely of steel bars shining in the sun. Some people who look at the picture see stoicism, willpower, a portrait of resignation; others see something else - something discordant and therefore terrible: freedom (Junod, 2009).

---

The Challenger disaster, the 9/11 attacks and the image of The Falling Man represent a pivotal period in the neo–gothic retreat from the futurist aspirations of technoculture as designed by NASA, Microsoft, Apple, General Motors and the like. Here we find the collective gaze returning to an earthly self–examination of the accident of technology and the fulfilment of the narrative of self–preservation that the machine induced reality has cultivated. In this space the iUser is complicit in the broader social shift towards Virilio’s illusionary existence, the ego of the black mirror, “a megalomania that has struck not just a few disturbed individuals but the whole of the living gathered in front of their screens” (Virilio, 2007, p. 21). The tools we have developed to engage and to bond through social networks are now being used to hook up to the archive of simulations and to look into our identity, to scrape our “unique markers” and in a frightening subversion of our individual freedoms pull our likeness from the safety of the swarm. It is as if by looking so deeply into the machine reflection of ourselves we have found a neo–gothic detachment from the real, leaning forward into our virtual selves quietly submitting to the machine’s–eye–view.

After astronomic telescopy and televisual videoscopy, the aeroscopy of our view of the world has tipped the gaze of each and every one of us inwards towards the centre of the Earth, while we wait for the unending round of spy satellites in turn to exercise the navel–gazing we are now so familiar with, in practising the most extreme police telesurveillance (Virilio, 2007, p. 47).
September 11 was central then to the darkening of this vision of the skies and the anxiety for what may lie beyond the horizon line. Virilio’s image loop became fixated with the possibilities of the end times in which dramatic angles, vertiginous space and visions of flight, aided by the machine and traumatised by the technological accident produced a frightening narrative viewed helplessly from below. And then we looked away. We looked down, vertigo it would seem was overcome by this new machine aeroscopy, the Google Earth, CCTV streetscape, GPS coordinates, a mega-grid. Initially this shift was observational – mechanical, technical, data driven – not the “hands off the wheel” pose of Bruce Sterling’s leap into the unknown. But the deliberate act would follow the lowering of the gaze, toes over the ledge, and the sensation of stepping off. This would become the central motif of the dark euphoric experience. The next logical step, as we saw on September 11, was the fall itself. But in this past–future space the end becomes an illusion – in the narrative of millennial culture the velocity of our fall is experienced via a simulation. The end foretold in high–res cinematic images, the end as digital object, the end as pixels of screen time. Digital information becomes the active operant of our return to the earth.

The vehicle – the plane, the jet airliner, the spaceship – is on show here too, falling back to earth in film and television and endless replays on YouTube. The technology of the aircraft is the least technological when it reaches the limit of that technology – and there is only one result when things wrong, we go down. The most profound articulation of this notion of falling back to Earth can be found in Alfonso Cuarón’s *Gravity* (Cuarón, 2013). This is the origin parable and the futurist manifesto intertwined – a film of much darkness and exquisitely composed moments of terror and euphoria. It is both the accumulation of 20th Century technological fantasy and the very real affirmation of the cyclic nature of existence. The big screen allegory of what Cai Guo-Qiang so successfully articulated with his *Heritage* installation at the Gallery of Modern Art. There are echoes here of Guo-Qiang’s serene pool of aqua blue water, that mercurial presence, that bosom of nature. Here the scale and physics of planet Earth and the great expanse of near Earth orbit is both a sign of humankind’s bold exploratory yearnings but also of our technical, mortal and biological limitations. The science of physics takes the crew of the shuttle into space, science drives their activities once in orbit, but the basic primal logic of survival ensures that Earth remains the final destination.

The film opens with a long lingering meditation on the Earth’s silky blue visage as the Space Shuttle Explorer drifts gently into frame. The blue planet is everywhere in the film, big bold and magnificent. Both symbolic object and luminous backdrop, the planet is reflected in the steel and glass of windows and helmets, granting perspective and conjuring memories. For the central character Dr Ryan Stone, the Earth, for the most part, is a very long way away both in those early nervous moments as she labours through her spacewalk, fumbling with tools, “Sorry,” she offers at
one point, “I am used to a basement lab in a hospital where things just fall to the floor” – to her unbridled panic when confronted with the eternity of space only minutes later. For Dr Stone the Earth is a comfort, a constant that spells home like a giant billboard in space – the humanness of life, the messiness of nature – Earth is the home of the logic that is the science of her life. Ultimately, the Earth is the all-powerful physical object responsible for the invisible force that keeps order in her orbit, until of course something interferes with that delicate balance: the accident of technology. In these “catastrophic” moments the utter separation between technology and humankind is made particularly evident. Technological failure is a human endeavour as much as technological innovation is and the narrative we construct around this engagement separates humanity from everything else.

In the film’s SFX set piece when the remnants of an exploded satellite pulverise the helpless Space Shuttle Explorer, Dr Stone and her companion, the shuttle’s Captain Matt Kowalski, are flung mercifully away from the shuttle and the deadly debris. But once reunited they are confronted by the inevitable silence of the network – “Houston in the blind!” they scream. What remains in the absence of the omnipresent Houston is a floating menagerie of disconnect. When Captain Kowalski sacrifices his life to save Dr Stone, cutting himself adrift to float angel-like into deep space, Dr Stone is left alone. With limited oxygen and limited options – the technology of last resort becomes a terrifying and alien thing. This disconnect – the stranger in a strange place – becomes the film’s central novum as we watch her overcome one technical glitch after another.

Despite the extent to which technology plays a key supporting role in Dr Stone’s eventual salvation, the technology fades into the background as the film progresses. When confronted with the full damage to their Shuttle Explorer and the International Space Station Captain Kowalski – now drifting into infinity, but still coaching Dr Stone via radio – indicates that her one chance of survival is the Shenzhou “lifeboat” capsule on the Chinese Space Station. “Look to the West,” he says “You see that dot in the distance? That’s the Chinese station.” The camera pivots to reveal a mere spec of light glinting against the backdrop of the universe. In one image, in one phrase, hope is reduced to a dot. It could be a 1 or it could be a 0 - the summit of human technological achievement just a mere

---

94 There are several moments in the film, and this is one of them, when the director allows the scene to slip into sentimentality. This diminishes the tension and the emotional balance of the film. This is also evident in the overplayed space-jock interplay between the performers George Clooney (Kowalski) and Ed Harris (Mission Control), both veterans of big budget action and interplanetary exploration (Solaris and Apollo 13 respectively). This goes some way to limiting the film’s overall appeal and contrasts the manner in which Sandra Bullock (Dr Stone) manages again to underplay her Hollywood profile. As Dr Stone, Bullock believably delivers the character of the earth-bound laboratory scientist struggling to adapt to the psychology and physicality of the increasingly hostile environment of space. Mid-way through the film’s second act, after surviving another wave of space debris she looks back at the remnants of the International Space Station floating against the backdrop of the Earth and mutters ruefully to herself, “I hate space.”
grain of sand in the cosmos. Humankind’s quest for the stars is reduced to a lifeless tin can floating in a vacuum 300km above the surface of the Earth.

Instead of technological salvation what we witness is Dr Stone’s rebirth. Her quest to return to Earth begins with her mastery and eventual escape from the grip of technology. She takes refuge in the International Space Station, in what is a momentary pause from the calamity that surrounds her. In this much vaunted feat of technological ingenuity and of political cooperation Dr Stone assumes the foetal position in the crucible of the air lock. The journey back to Earth and back to herself has just begun. With the sun flaring through the window behind her, Dr Stone ever so gently spins in zero gravity as oxygen cables and exposed wiring float harmlessly around her mimicking an umbilical chord – the liquid electric substitute for the fluid of the womb. When she finally reaches the Soyuz capsule to attempt the journey across to the Chinese station technology fails her again. The rockets fail to fire. Fuel stores seem to be too low to power the capsule. All would appear lost.

In an attempt to make contact with Houston she picks up a rogue radio signal, she hears voices, but it is in another language... Is that Russian? Are they Chinese? Are you from Earth? There is laughter and conversation, but nothing makes sense, it seems hopeless: Where is Houston!? But eventually what becomes audible over the transmission is a far more familiar and direct sound, something far more primal: the howl of dogs.

**DR STONE**
(softly)
Dogs...
(into headset)
Are those dogs? Those are dogs!
Are you calling from Earth?!

The barking of several dogs can be heard behind the man’s voice. She GRINS.

She listens to the man’s laughing voice, shakes her head helplessly and sighs.

**DR STONE (CONT’D)**
Make your dogs bark for me.

She listens as the HOWLS of dogs can be heard as The man himself begins to howl.

**DR STONE (CONT’D)**
Aawoooooo! Woof woof.
Aawoooooo!

**TRANSMISSION**
Aawoooooo!
In delirium, overcome by the emotion of such earthly familiarity Dr Stone herself howls like a dog. In the most primal form of communication, she is regressing, she is talking to planet Earth, she is willing herself back into existence. But she is also overcome with a sense of hopelessness. The air is thinning, the temperature is dropping, the windows are icing over, the Soyuz capsule seemingly inoperable and the bleak endlessness of space now a distinct possibility. Dr Stone begins to cry. A tear like a delicate orb peels away from her cheek and floats towards the camera. And then over the crackling radio we hear a baby cry. The man’s voice now appears to be singing a lullaby. Dr Stone stops herself and listens. “A baby?” she smiles and the tears flow again. Her voice quivering “There’s a baby with you, huh? Is that a lullaby you’re singing?” And she remembers another time, something lost. “I used to sing to my baby.”

In a moment of utter despair, in the confines of a cramped space capsule hundreds of kilometres above the Earth, a mother cries. While on a distant radio channel a father sings a lullaby. In the film’s opening title sequence, the screenwriter assures us that in space, “life is impossible,” and yet here in this apparent moment of hopelessness – with the Earth far from view and long out of sight – the link back to life and motherhood could not be more explicit and Dr Stone’s survival more certain.

In *Gravity* the Earth is never far from view. Its powerful call permeates everything. In these ninety minutes of computer simulation the image of the Earth is returned to its 1960s counterculture grandeur, its meaning and significance momentarily restored. This is no more explicit than in the final sequence of the film when Dr Stone, like a rogue asteroid, having blazed through the atmosphere, plummets miraculously into what appears to be a large lake or inland sea. Her ability to overcome the limitations of the technology to wrestle a space ship back to Earth and survive the velocity of the descent is an achievement in itself. But it is her emergence from the
primordial soup that is most profoundly evocative of the origin parable. With the capsule sinking amidst the reeds and murk stirred up from the sea bed into the darkness below Dr Stone emerges from the capsule. A frog swims into view, the original amphibian, kicks effortlessly through the water towards the light above as Dr Stone struggles to free herself from her space suit. The suit that once protected her from the cold vacuum of space is now weighing her down as the pressure of the watery deep envelopes her. But she is free. She breaks the surface with a life affirming gasp. For the first time in the film since Captain Kowalski stared in wonder at the gleaming Earth below we experience a sense of tranquillity. Dr Stone floats on her back, staring at the sky while in the distance the green undulating hills of a virgin landscape reveal that we are indeed returned home. That she is in fact reborn, that the human species against all the odds might somehow have a chance.

As she makes for the shoreline the camera tilts up to the sky above to reveal the remaining fragments of the Chinese space station streaking across the sky in a cluster of fire balls. She crawls...
through the sand and the reeds, pulling herself onto
the muddy beach gripping fists full of red dirt as she
comes to rest, her face in the mud, smiling with
exhaustion and emotion, “Thank you.” In this final
sequence that lasts some three minutes and forty-
seven seconds the return to Earth becomes the
return to Earth. From the moment that Dr Stone
breaks the surface of the water to her inevitable
climb to her feet and her tentative stagger along the
shoreline the imagery is accompanied by a
triumphant musical score replete with choir, our
view of the action is from a camera position that
remains at ground level making certain that there
can be no doubt of the parable being played out
here. The watery escape, her wide eyed gasp for air, her
tentative first steps – is not an end but a
beginning. Not just a rebirth of the species but a
reimagining of Utopia bereft of buildings and
vehicles and infrastructure and electronics. This is
woman as the first beast on land. Far from the Cyber
City. This is the fantasy of the safe landing, the
peaceful reconstruction of a lost and impossible
future.

Warhol knew this in 1962 when he replayed to the
world what we did not want to see – the crushing
end of a fall from eighty–six stories in the sky by
Evelyn McHale who had jumped from the
observation deck of the Empire State building. The
end of her story lay in the cold steel embrace of a
car roof in Warhol’s multi–panel image, Suicide
(Fallen Body) (Warhol, 1962) (see Figure 240).95 For

Figure 240 The original photograph of Evelyn McHale
by Robert Wiles (Wiles, 1947) which Andy Warhol
appropriated for his work, Suicide (Fallen Body).

Figure 241 Andy Warhol’s Suicide (Silver Jumping Man)
(Warhol, 1963).

95 Warhol’s multi–panel reproduction was a photograph by Time photographer Robert Wiles a few minutes
after her death in 1947, some 15 years prior.
art critic Jonathon Jones, Warhol’s obsession with violent death in his Death and Disaster series of works depicts “the spirit of our age” for Warhol saw “the sky above New York full of falling bodies”, he painted this into being in his startlingly prophetic work, Suicide (Silver Jumping Man) (Warhol, 1963) (see Figure 241) and he reproduced it again and again with his reproduction of the Evelyn McHale image (Jonathon Jones, 2007). In his 1964 experimental work Empire (Warhol, 1964) in which he filmed the Empire State building for 6 hours and 36 minutes the sense of absence is haunting. The film was originally shot at 24 frames per second but is projected at 16 frames a second, therefore it plays in slow motion, making for an eight hour film of epic endurance. Yet the fact it is not played at full speed gives the film an ethereal quality and the sense that something might in fact transpire beyond the subtle blinking of lights and the minor fluctuations in the surrounding haze. In the end, just before dawn, the floodlights are turned off and for a brief time the height, technological magnificence and the boldness of the building’s art deco design are rendered invisible. The “prophet of our crisis” knew how to normalise the spectacular and make the pedestrian seem other worldly. He saw the end of history in the fabrication of fame and of the industry of art. He also saw that death was losing out to the endlessness of the mediated glare. As Baudrillard would observe many years later:

We have lost history and have also, as a result, lost the end of history. We are labouring under the illusion of the end, under the posthumous illusion of the end. And this is serious, for the end signifies that something has really taken place. Whereas we, at the height of reality – and with information at its peak – no longer know whether anything has taken place or not (Baudrillard, 1997, p. 450).
And so the return to earth. The fall becomes a glide, a silent gasp, the whip and slap of fabric, neither terror nor ecstasy, a strange fulfilment of an anti-climax. We see this all over the pop cultural objects which have framed this analysis: towards the end of *A.I. Artificial Intelligence* (Spielberg, 2001b) when the main character David plummets into the icy depths of a vast blue wasteland. An image reminiscent of the pose of James Stewart on the poster for Alfred Hitchcock’s *Vertigo* (Hitchcock, 1958) and crystallised most recently in the black and white rotoscoped form of Don Draper falling amidst the office blocks of New York’s Madison Avenue in the title sequence of *Mad Men* (Weiner, 2007). And while the Challenger disaster is the accident of a launch into space it is also the horror of the return to earth. We may feel empathy but we can only see what they saw through simulation.

And thus we construct our own dark euphoria in film, television, fiction and video games. We are confronted by the fall to earth at every turn: *The Amazing Spiderman* (Webb, 2012) and its sequel (Webb, 2014) feature Point of View (POV) images looking down as Spiderman swoops through the city, this is in a distinct stylistic break from the past in which we watched Spiderman perform his tricks at a distance framed as it were by the Avenue of the Americas. Here we are Spiderman, we watch the city rise and fall below. In the EA Games parkour inspired release, *Mirror’s Edge* (EA Digital Illusions CE & Dice, 2008), we leap between buildings making judgements about distance and height and velocity as we deliver physical communiqués across the city’s rooftops to avoid the prying eyes of the surveillance systems humming in the network far below. In the same vein, *Ampisound* a production company that also represents a group of athletes who perform parkour across the UK, produce their own giddy POV videos. Their films are slick, stylish and highly produced. Collectively the group have registered over 14 million views on YouTube with their most successful films, *Cambridge Parkour POV* (Bass, 2013a) (2,325,734 views) (see Figure 245B) and *Mirror’s Edge Parkour POV* (Bass, 2013b) (4,385,469 views) making up nearly half of all hits. Parkour is a gravity defying physical urban art form which blends the human form with the architectural environment – the city becomes their canvas. Parkour is in one sense about athleticism, strength and speed but also perhaps most importantly it is also about grace and rhythm. The videos mimic the visual style of the *Mirror’s Edge* game with the camera strapped to the parkour athlete’s head giving a giddy POV image of rooftops, ledges and breaches between buildings and walls. Similarly, *Vaya Studio* an architectural

---

96 It was revealed some years later, that the crew were most likely alive for a further two minutes and forty five seconds after the explosion which destroyed the rest of the shuttle. “What the best data tell the experts is that the Challenger broke up 48,000 feet above the Atlantic. The undamaged crew compartment, impelled by the speed already achieved, soared to a peak altitude of 65,000 feet before beginning its curve earthward” (Barbree, 1997). What was left of the Challenger eventually hit the surface of the Atlantic at speeds of up to 320 kilometres an hour. For more information on the Challenger disaster including updated findings of the crash investigation see Jay Barbree’s article, *An Eternity of Descent* (Barbree, 1997) on NBCNews.com and Ker Than’s summary of some of the myths surrounding the disaster in his article, *5 Myths of Challenger Shuttle Disaster Debunked* (Than, 2011), at National Geographic.
visualisation team working out of Sofia in Bulgaria, produce visual walkthroughs of architectural designs and development proposals. In 2012 they produced a film to showcase their more imaginative take on the urban environment using 3D Studio Max and Vray software. The film is entitled *Dream* (Mihaylov, Tilev, Petkov, Krystev, & Nachev, 2012) (see Figure 245C). The opening sequence features a POV shot of someone – we, the audience – lying on what appears to be gravel but it is actually the roof of a building. We stand, we are in a city, somewhere very high – it’s New York City. There’s the Chrysler building, the Empire State, we walk to the edge, we look down – and jump. The POV shot of the fall is brisk, unexpected and shocking ride. And in an indulgence that is rarely seen in cinema, this film takes us all the way down to the pavement below. Smack – black out. The rest of the film features dreamy landscapes, a sports car careening across the desert, an old locomotive train pulling out of a station and some crisp futuristic architectural interiors. This is an oddly nostalgic mix for a design studio which “visualises architecture” – i.e. sports stadiums, office blocks and commercial districts. But to utilise a leap into the unknown from the ledge of the metropolis and then hurtle the viewer to their grizzly end as the centrepiece of their sales pitch is a dark turn in the most unexpected of places. Plot Point Productions confirms the emergence of this trend of cinematic falling in the video supercut, *Gravity: A Falling Montage* (Plot Point Productions, 2013) (see Figure 245F) which compiles similar sequences from feature films in what can only be described as an extreme fetishization of the act of falling. The music is compulsive, rhythmic and loud for the most part as characters walk to the edge, along the ledge, and then some are pushed some slip and some fall. But we are with them, we watch them, we follow them and in a several examples we assume their POV and become them. The music abruptly changes, quiet slow melodic – a simple coda played on a keyboard as the imagery slows down. We are watching the romance of the fall. We see close-ups of character faces as they accept their fate, as they stare at the earth rushing up to meet them. We can hear the wind in their clothes, we can share the euphoria of the fall, and watch in slow motion the most final of endings. Again and again and again.

/////

*This is the consolidation of the fall, the extension of the notion of looking down, the digital media object as talisman in the endlessness of the end times. This accumulation of media, this museum of accidents, and this fall back to earth constitutes the most explicit manifestations of the dark euphoric turn in millennial culture. In the first half of this document I demonstrated how Bruce Sterling’s neo-gothic narrative framework permeates millennial technoculture through the chromatic painting of the Italian Futurists, the iconography of contemporary technology companies and the cultural*
narrative of technological simulation – in fictional narratives, corporate promotion as well as scientific data modelling. In a sense this represents a vibrant techno–futurist glow which seduces from the surface, a light on dark aesthetic. In the latter chapters I have explored the canvas upon which this seduction has operated – a persistent technological darkness, a neo-gothic temperament – that permeates everything beyond the frame. These two seemingly opposing narratives represent a schism in the present–future tense in which the proclamations of technological utopianism clash with the evolving catastrophe of the millennial epoch – a collective dark euphoric moment that is falling away beneath us into the non-future future.
Figure 246 James Webb Space Telescope (NASA, 2012)
In gothic high tech, you’re Steve Jobs and you’ve built an iPhone, which is a brilliant technical innovation, but you also had to sneak off to Tennessee to get a liver transplant because you’re dying of something secret and horrible. You’re a captain of American industry. You’re not like, you know, some General Motors kind of guy. On the contrary, your guy is really kind of like got both hands on the steering wheel of a functional car, but you know, you’re still gothic high–tech because, you know, death is waiting, and you know not a sort of kindly death either but a really kind of sinister, creeping, tainted wells of Silicon Valley kind of super fun thing that steals upon you month by month that you have to hide from the public, from the bloggers, and from the shareholders. You just kind of grit your teeth and pull out the next one. A heroic story really, but very gothic.

- Bruce Sterling "On Favela Chic, Gothic High–Tech" at Reboot11 in Copenhagen, 2009 (Sterling, 2009).

Steve Jobs the arbiter of the slick product launch, the messianic figurehead of a consumer electronics aesthetic who wrestles privately with mortality like the rest of us is presented by Sterling as a potential case study in gothic high–tech supreme. But it is in the dark sub–plot of all devices – not just those by Apple but also those produced by the likes of Samsung, LG and Nokia – that the gothic high–tech narrative is most tangible. In this space of technological flows the language and imagery of this narrative can shift from the abject adoration of industrial design to the darker tendencies of their structural origin. Intersections with space exploration, military defence and surveillance technologies all coalesce in an ambiguous thread that extends from the technology we hold in our hands to the battlefields of the Middle East to the factory floors in China to the open cut mines in the jungles of Africa and the rioters on the streets of London. This is the dark history of mobile technology.

A scene in the sixth series of the television series Mad Men illustrates perfectly this convergent trend of historical event, technological invention and fictional narrative that characterises much of this examination. In a meeting between the partners of the ad agency Cutler, Gleason and Chaough to discuss a campaign pitch for Chevrolet, mortality and futurism collide in a moment that echoes Sterling’s observation of Jobs’ final years. It has been agreed previously that
the campaign will feature rocket ships and “anecdotes about astronauts”. The year is 1968 the race to the moon is soon to reach its climax and the emphasis in the series up to this point has been the emergence of the counterculture movement and its influence on advertising and the creative process. Space flight, marijuana and The Beatles are in the air. One of the partners and key creatives, Frank Gleason, complains he is sick of the direction the campaign has taken, “I’m tired of drawing rocket ships, and I don’t want to look at this work again!” His partners are shocked by the sudden outburst from the normally reserved Frank, “Are you not on board with this?” he is asked by partner Ted Chaough. “I’m just tired of rocket ships that’s all…” (Getzinger, 2013). When Frank is pressed on his dour mood he declares he has pancreatic cancer. After this Ted recoils – he is shocked, this is sudden unexpected news, the other partner in the agency has obviously neglected to tell him of Frank’s illness. He tries to rally Frank telling him that he is going to “do his best work”, that he is going to “stop talking about money” and the fate of the company and that he is going to beat the cancer that is eating away inside of him. “Aye aye,” says Gleason stoically. It is a moment that not only recalls the unfortunate fate of Steve Jobs, but also the rallying of investors and cheerleaders of Apple stock and products for whom Jobs, the “captain of American industry”, was such a central and talismanic figure. It is within this will to prosperity and technological futurity playing against the reality of an impending fall that is so very gothic and so very emblematic of the duality of contemporary technoculture. The future is there – albeit in retrograde – bright, glistening and muscular in the designs of rocket ships, in the clean lines.
of a Chevrolet Camaro,\(^\text{97}\) in the billowing flames and smoke of intercontinental missile launches, but it is also tainted by the fragility of life - of a darkness hidden and invisible, deep within the cells of our bodies.

At the end of the scene, Frank and Ted walk to the door at which point Ted asks, “Will you tell Jim that you told me?” referring to the other agency partner who had been privy to Frank’s condition. Frank looks at him squarely, “He’ll see it on your face,” he waits a beat and then musters a glib reassuring smile, “Everybody,” he says “loves astronauts.” The rocket ships will endure, the show will go on and the cancer, for now, has been dealt with.

George Dyson in a recent *Long Now Foundation* seminar, points out that the ideas and technologies discovered by Norbert Wiener and Julian Bigelow when working on the – almost impossible – problem of tracking missiles shot from enemy planes during WWII was the precursor to contemporary convergent technologies: “The fact that you all have these devices in your pockets that work through billions of cycles without errors are largely due to his (Bigelow’s) *Maxims for Ideal Prognosticators* for avoiding and correcting error and noise.” In other words, “through the problem of trying to predict the path of an aeroplane” and blast it out of the sky lies the seeds of the technology that surrounds us (G. Dyson, 2013). Military signifiers are also employed to spruik the commonality of emerging technologies in the domestic space. Nokia’s promotional pamphlet for future technology applications, *Mobile Mixed Reality – The Vision*, echoes the type of language that might be employed in a Lockheed Martin or Northrop Grumman pamphlet:

> On one end of the Mixed Reality continuum is augmented reality, a technology that enhances the world around us by overlaying important data, usually in real-time. One can immediately bring to mind the image of a fighter pilot looking through his visor’s Heads-Up Display (HUD) at a view of the sky enhanced with real-world information, such as the target, altitude and horizon data. This type of technology has been used in specialized areas for years, but now is becoming much more commonplace, though many may not identify it as advanced technology in its daily context (Nokia Reserach Centre, 2009).

The message inherent in this extract – designed to sell mobile phone technology – is that the technology of the dark arts of military conflict embedded in the devices of the future should not be

---

\(^\text{97}\) Despite many believed at the time, the car referred to in the Mad Men episode, XP-887, was not a Chevy Camaro which debuted in the United States in 1967 – the year before the episode takes place – but it was the Chevy Vega (see *Figure 248*) which would be launched to much acclaim in 1970 (Sorokanich, 2013). The model had a troubled history, for more on the model’s history see *New York Times* article [here](#) and the *Road & Track* article [here](#).
regarded as strange or even somewhat frightening, but rather completely normal. Of course it is not uncommon for electronics manufacturers, telecommunication companies and game publishers to appropriate military signifiers to sell and promote their wares. Indeed, popular culture has a rich symbolic history of intersecting with the war machine in the arc of historical writing and image making: from heroic religious figures, to ancient battles between empires to the contemporary myth making of epic cinema, video games and media propaganda. Moreover, explicit icons of the game

Figure 249 (Column 01): Promotional images from the film *Alien* (Ridley Scott, 1979) (Column 02): Evolution of U.S. Airforce military aircraft, the Curtis P-40 Warhawk (Parrothead Jeff, 2009), the RQ-4 Global Hawk (U.S. Airforce, 2012), and again an RQ-4 being unloaded from a C-5 Galaxy cargo carrier (Gathua & Rodgers, 2011). (Column 03): Images of Dell’s Alienware range of gaming computers (Corporation, 2012).
industry, of cinema and modern warfare technologies also display an intersecting design aesthetic. In this space the elements of the gothic high–tech narrative converges dramatically blending the visual iconography of science fiction, technological simulation and the evolving capacity of the vision machine into a dark fantastic reality. The iconography of Alienware computers have an obvious precedent in the visually rich lore of UFOs and alien visitors. The visual cues and naming conventions of their systems recall a history of alien abduction, strange metals and futuristic flying objects, the mysterious goings on in Roswell New Mexico and of course the smooth metallic aesthetic of the most enduring of extraterrestrial fantasies the Alien franchise of films (Ridley Scott, Cameron, Fincher, & Jeunet, 1979-1997). Yet between these two visual markers – let’s say for purposes here that they represent fictions of technoculture – is the symbolic visual language of the military aircraft. From the snarling nose flairs of the Curtis PQ-40 Warhawk which is evocative of the menacing grill of the Alienware Area 51 desktop machine and the snarl of HR Giger’s Alien to the contemporary blank “sightless” stare of the RQ-4 Global Hawk unmanned drone aircraft (see Figure 249). Elsewhere, the mixed reality of modern warfare and science fiction cinema becomes a model for vision machines with both military and domestic functions (see Figure 250). Here the virtuality of the image has been supplemented by the virtuality of the iUser as objects of sci-fi fantasy evolve into high–tech military devices while simultaneously devolving – with the reductive powers of the electronics market – into

Figure 250 Machine vision genealogy (Top row from left to right): The IT–O Interrogator droid from Star Wars Episode IV: A New Hope (Lucas, 1977); Raytheon Company’s MTS–B Multispectral Targeting System (Raytheon Company, 2012) and the Logitech C600 webcam (Logitech, 2010). (Bottom row from left to right): Probe droid from Star Wars Episode V:The Empire Strikes Back (Kershner, 1980), Lockheed Martin’s Longbow Fire Control Radar (FCR) system (Lockheed Martin & Northrop Grumman, 2013) and the Microsoft Xbox 360 Kinect system (Microsoft, 2013).
ubiquitous everyday domestic objects. Sterling’s gothic high-tech temperament is embedded not only in the device’s genealogy but also in the fantasy of its human–like functionality and our perceived lack of control over their viral ubiquity. War and cinema have given us the all–seeing superhero, the cyborg warrior, the augmented rebel in the midst of the evil empire (see Figure 251). The reality is far different and certainly not the utopian dreamscape of General Motors, Microsoft, Nokia and DHL’s infomercials. The result instead is a present–future anxiety born from the collision of these two techno–cultural narratives and the menace of their respective designs. Here the fiction of science is simulated machine death, this is transposed with the more obscene reality of death delivered explicitly by the machine itself.

While the vision machine is distinctly remote and for the most part independent of the human interface it still remains a technology born from a very human desire to control and to virtualise the real. Paul Virilio’s 1994 study on perception pre–empted as much, technologists he said are “preparing the way for the automation of perception, for the innovation of artificial vision, delegating the analysis

Figure 251 The augmentation of machine vision:
Top Row: Display of WWII Pilot Gear, Crepon France (Burke, 2010) Star Wars Episode IV: A New Hope (Lucas, 1977);
Second Row: The Dam Busters (M. Anderson, 1955) Star Wars Episode IV: A New Hope (Lucas, 1977);
Third Row: U.S. soldier taking aim with a laser guided site (Aston & U.S. Airforce, 2009) and a promo image from Terminator 3: Rise of the Machines (Mostow, 2003);
of objective reality to a machine” (Virilio, 1994, p. 59). And so, apart from a select few, we have become absent from this process – the cameras look down at us from CCTV towers, webcams docilely stare back at us from our computer monitors and the drones and satellites observe measure and target without our knowledge, consent or right of reply. For media artist Jaime del Val, coordinator of *Multiplicities in Motion: Affects, Embodiment and the Reversal of Cybernethics* (del Val, 2013a), these systems of looking and controlling are an extension of Foucault’s political systems of control. They are also part of the “metabody” – as abstract and distinct from us as they have perversely become an extension of us and the systems we create. This is an important realisation for the Cyber City if its inhabitants are to negotiate terms with the uber–optics of machine vision. These new technologies are a part of an evolving networked system that is rapidly transforming into “a panchoreographic: a new (and old) regime of affective and kinetic power, whose privileged field of operations is in the structuring and pre–empting of perception and movement. The panchoreographic engineers a super alignment of perception built upon multiple strata, from Euclidean geometry and Renaissance perspective to ubiquitous cameras, screens and interfaces.” (del Val, 2013b) For Virilio, Foucault’s panopticon has evolved into a high–tech “megalascopect” turning the observer into the observed, a situation where the single becomes the many. Virilio notes this paradox of machine–attention has given way to a very gothic notion of the urge to look away – to internalise the horror of the real – to endure by not seeing, to gasp but not to have the air left to scream:

With ‘teleobjectivity’, our eyes are thus not shut by the cathode screen alone; more than anything else we now no longer seek to see, to look around us, not even in front of us, but exclusively beyond the horizon of objective appearances. It is the fatal inattention that provides expectation of the unexpected – a paradoxical expectation, composed at once of covetousness and anxiety (Virilio, 2007, p. 6).

Virilio cites a 1953 observation by philosopher Maurice Meleau–Ponty as the origin story of this malaise: “To obey with your eyes shut is the onset of panic. In this world where denial and morose passions take the place of certainties, people seek above all not to see” (Meleau-Ponty in Virilio, 2007, p. 5). The techno–cultural narrative then bends away from the fictions of cinema and the video game console and the corporate dreamscape to an altogether more unsettling reality in which the future has become militarised and the only option is to look is away.

Science fiction tropes and corporate futurism is active in the militarisation of the contemporary dreamscape – space exploration, homeland security and cyber defence being the predominant mythology. While the design of the optical mechanisms that support these endeavours
is military futurisms most fully realised technological system. The narrative of technological anxiety – the gothic high-tech sublime – is wound tightly into the fibres of this convergent fantasy. The U.S. Military for instance possesses a Corporate Communications division which authors techno-futurist narratives enlisting conventional advertorial infomercials to spruik the wholesome innovations of modern warfare and defence research with a beguiling cheerful tone. The mechanics of the fiction are familiar, taking a leaf out of the Chevrolet and Westinghouse playbook, the U.S. Military articulates the techno-futurist dream as an “intelligence” beneath the surface, the “brains” within the device (Ackerman & Bedke, 2010). The tools and methods of warfare become a playful mix of child-like humour and kitsch geek science. The U.S. Air Force is responsible for a range of slickly produced content including interactive animations, video infomercials and web portals. Under the banner of “Science Drives Everything We Do” the division has created an educational STEM portal to spruik their scientific research credentials to American High School students (and one would imagine those whom they would view as potential recruits, as the “Careers” button is quite prominent). The site mostly consists of graphics heavy video game–style web videos under the alluring techno-futurist categories of Lasers, G-Forces, Remotely Piloted Aircrafts, Micro Air Vehicles, GPS Satellites and Supersonic Flight (U.S. Air Force, 2013). In one playfully energetic video, AFRL: Create the Future, rockets from the sky become a science of fun: “When you see a rocket fly up in the air it is not just maths and science, it’s not just physics – it’s – fun.” Chemical weapon research becomes an artistic pursuit: “You get...
to go in like an artist with your palette of chemicals and what you
want to do and where you want to go is only limited by your
imagination.” And robotic drone technologies become part of the
war fighter’s sandpit: “Yeah we are playing with toys all day, but we
are also learning to solve complex problems” (Air Force Research
Laboratory, 2012). The U.S. Air Force collaborate regularly with
outside partners – usually civilian companies which contribute to
the war effort via technology development – to deliver programs
and promotional collateral for the armed forces under the guise of
science and innovation. One of these companies is Northrop
Grumman who produce a range of weapon technology and combat
services such as the BattleSpace Command system, Electro-optical
Weapon Systems, and the Midcourse Defence Fire Control &
Communications missile defence system. Some of their specialist
aircraft technology are staples of the U.S. Defence Department’s
combat fleet including the RQ-4 Global Hawk drone, the A-10
Thunderbolt Close Air Support aircraft, the E/A-18 Growler war
fighter and the RainStorm Advanced Precision Targeting system.
Their “charitable” arm is the Northrop Grumman Foundation which
funds a range of education initiatives including the STEM Flix
initiative which is an interactive video series featuring “Science Bob”
and the Cyber Patriot National Youth Cyber Education Program. The
corporate blurb for the Foundation on the STEM Flix site best
explains Northrop Grumman’s playful relationship with the STEM
(Science Technology Engineering and Mathematics) education
initiative:

STEM makes nearly everything we enjoy in our daily lives
possible – from the circuits that make computer tablets
work, to the materials used to make snowboards that allow
you to do cool tricks! ... And what about some of things that
you’d LIKE to do one day, like travel through time?! Well,
while you might not be able to click your heels and end up
back in the land of the dinosaurs just yet, the technology to
make it possible may be closer than you think – all thanks to
This text is accompanied by a menu which links to “Fun Facts”, an appearance schedule for Science Bob,“Experiments & Activities” and the mandatory “Media Gallery”. Below this is a corporate statement that articulates the Northrop Grumman PR mantra: “Our Foundation is a charitable giving arm of a company that makes everything from robots to satellites, allowing people to communicate with each other, help explore new horizons, protect our citizens, and so much more” (Northrop Grumman Foundation, 2013). Any acknowledgement of the products and services Northrop Grumman are actually responsible for developing and deploying on the battle field are notable for their absence. On the Cyber Patriot program home page Northrop Grumman in partnership with the U.S. Air Force Association carefully blend the corporate and government agendas of the STEM initiative (pdf), the cyber security threat and the Patriot Act (pdf):

The CyberPatriot National Youth Cyber Education Program was created by the Air Force Association to inspire high school students toward careers in cybersecurity or other science, technology, engineering, and mathematics (STEM) disciplines critical to our nation’s future. At the core of the CyberPatriot program is the National Youth Cyber Defense Competition, which challenges teams of students to resolve real-life cybersecurity situations in a virtual environment (Northrop Grumman Foundation & Air Force Association, 2013).

And while Northrop Grumman maybe very open about their role in the Defence industry, the procurement of government contracts and the capabilities of their technologies via the extensive archive of media they make available on the company’s website and their YouTube channel the toll their technology inflicts on human life is less obvious. The narrative of the company’s promotional video, Defining the Future, is familiar corporate futurism yet with a disturbing war faring twist. The video features all manner of technologies: laser sighted weaponry, bad guys seen through night vision goggles, satellites scanning and probing the globe, drone aircraft silhouetted against sunsets, submarines and battleships cruising the high seas, colourful flashy graphics of radars and targeting systems, lasers shooting down missiles, lasers scanning faces, rockets in space, explosions in space and computers – computer code, computer chips and computer interfaces – lots and lots of shiny high-tech.

Over these images is what at first listen could be mistaken for a ‘90s power ballad, it is all majors and high melodrama, a song about security, strength and endurance. Imagine Tomorrow is a

---

love song to the future, a bespoke composition wrapped up in religious symbolism, American patriotism and saccharine futurist imagery:

The first light of the cosmos
A vision of the past
A snapshot of light years gone by
It’s the light we use for searching
It’s the light we use to fight
For miracles to capture if we try
The future is dawning in our eyes
Imagine tomorrow and all that we can do
Building the future today
A future for you
(Northrop Grumman, 2007)

In a more menacing context, military futurism also takes place in the U.S. Defence Department’s various colleges and think tanks, not as PR but as a research strategy. What started with DARPA in 1969 continues with DARPA in the new millennium as network properties and artificial intelligence
initiatives continue to be central protagonists in the military technology agenda. In a narrative construct similar to that of the corporations which manufacture and market communication technologies to the general public the signification of the network and the language of the information society comes full circle. Discussed openly in an article published in 2010 on the Armed Forces Communications and Electronics Association (AFCEA) website, Maj. Gen. Curtis M. Bedke, USAF, commander of the Air Force Research Laboratory (AFRL) likens the future of drone warfare to the hive–like behaviour of a social network: “Lots of flying brains making real–time decisions all within the parameters of the rules of engagement established ahead of time” (Ackerman & Bedke, 2010). Effectively warfare by proxy, warfare by joystick, the machine’s view from above becomes Virilio’s megalascopy in real time, in high definition. Meanwhile the angel–like presence of unseen technology above and beyond the horizon is not designed to prevent the sky from falling but to make the fall more precise. Here the space of flows is a stop–and–go affair, the information space becomes the “battlespace”, contested by nation states and manipulated by “technology” and “leading edge science”. It becomes then an automated process where “humans would remain in the loop” in an almost
subordinate monitoring capacity as “brains with wings” become “more autonomous” their behaviour eerily echoing Jaron Lanier’s network–hive mentality as they seek to maintain a “dominant offensive cyber engagement” (Ackerman & Bedke, 2010). This is the inverse of the techno–futurist space dream. Instead this is the nightmare scenario evoked in a sequence of ‘swarm films’ which appeared in quick succession in the years immediately following 9/11. Beginning in 2002 with George Lucas’ *Star Wars Episode II: Attack of the Clones* (Lucas, 2002) and continuing with Arnold Schwarzenegger’s last outing as the Terminator in the 3rd instalment of the series, *Rise of the Machines* (Mostow, 2003), *The Matrix* sequel *Matrix Revolutions* (The Wachowski Brothers, 2003), *I, Robot* (Proyas, 2004), and *Sky Captain and the World of Tomorrow* (Conran, 2004). Here the anxiety of out–of–control swarms of autonomous A.I. is writ large on an epic canvas (see Figures 256–260). This is at odds with Spielberg and Kubrick’s more moralistic investigation from mid–2001. In *A.I. Artificial Intelligence* (Spielberg, 2001a) the ‘robots’ were more human than human and the anxiety of the swarm had yet to fall from the sky. Each of the swarm films in one way or another is a parable of the potential dangers lurking within the apparent superior organisation of the hive. The dust jacket premise from the forthcoming film from Spielberg adapted from Daniel Wilson’s 2011 bestselling novel, *Robopocalypse*, perfectly describes the swarm as viral digital object:

In the near future, at a moment no one will notice, all the dazzling technology that runs our world will unite and turn against us. Taking on the persona of a shy human boy, a childlike but massively powerful artificial intelligence known as Archos comes online and assumes control over the global network of machines that regulate everything from transportation to utilities, defense and communication (Wilson, 2011).

Figure 261 The cover of Daniel Wilson’s 2011 novel *Robopocalypse* (Wilson, 2011) and a still from Ridley Scott’s 1982 film *Blade Runner* (Ridley Scott, 1982)
These films speak to the darkness within the gothic high-tech ferment; a speculative genre of cinema – of technophilia cinema perhaps – even though they exude in their execution the technological expertise of high-end CGI production techniques. Yet what these narratives also embody is the fear of the swarm – a mistrust of human nature when it succumbs to the pull of the pack, the mob, the horde. Could it be that our fear of the robot swarm is not based on a technological agent but the very primal instincts we fear exist deep within ourselves?

Perhaps the first modern cinematic parable to wrestle with such questions was Ridley Scott’s *Blade Runner* (Ridley Scott, 1982). As we adopt the machine we adopt the possibility that we take on machine like thinking and conversely the machine adopts human like cunning and the ability to wilfully deceive. Here emotions are carved out by logic rather than feeling and the analogue touch becomes the algorithm of virtuality. Towards the end of Scott’s riddle the main protagonist, the bounty hunter Deckard, programmed with memories that he thinks are real, discovers – despite himself – the capacity to love. His masculine generic film noir persona compromised by the human simulation. He is the simulation simulating the fiction. As Michael Newman writes, “The irony of the film is that the frame for simulation is not reality but simulation itself: what we view in the cinema is already a totally simulated reality where the humans conform to stereotypes as much as the replicants, coded in the eclectic mixture of movie genres and period styles. Indeed, towards the end of the film the replicants come to elicit our sympathy, as victims who seem more vivid than the humans” (Newman, 1983). *Blade Runner* and the swarm films tell us not that we have been robbed of a new technological utopia but that the opposite is unknowable, that the actual catastrophe is the trauma of not knowing one’s self. As critic Andrew Milner observed in the final moments of *Blade Runner*:

There is indeed a sense in which Deckard and Rachael can be read as a new Adam and Eve escaping into a new Eden. But Rachael is certainly not a woman and, if Scott is to be believed, nor is Deckard a man: these are replicants. If that is the ending postmodern humans want, then this is so for reasons precisely the obverse of Heldreth’s, not only because we like our men to be men, and our women women, but because we’re also no longer very concerned whether either is still actually human, no longer entirely persuaded of our evolutionary superiority as a species (Milner, 2004, p. 274).

And here is the rub. If this new found inferiority were true— what would it take for us to lower the gaze, to look away from the stars? And while the swarm films layout decaying gothic vistas of menace and exhilaration – a utopian promise now riddled with swarms of clones and bots and machines and avatars – do we negate hope for abject resignation? What do we know of ourselves
when we cannot recognise what is ours? The neo-
gothic narrative being played out here is not only
the obvious novum governing all of the swarm
films (that the A.I. has developed an unnerving
mistrust of their human counterparts) but that
humans have developed a disconcerting lack of
faith in ourselves? To look and not to know: to
design, build and then to ultimately secede to the
technology. To construct in our image a vengeful
enforcer capable of very human notions of control
and of justice - is this not the role of the Terminator
(Cameron, 1984) and of the Robocop (Verhoeven,
1987)? Are these wide screen imaginings science
fiction’s ultimate technological object – the robotic
cyborg warrior? Each of these films presents a very
dystopian view of our present-future world, a place
damaged by peculiarly human failings and broken
political systems. This is a place in which the cyborg
from the future (and the past, as it were) is
required to mete out justice and save the humans
from themselves.99

There is evidence that the 1980s fantasies
of warrior cyborgs have contemporary real world
templates. DARPA inspired projects include the
Boston Dynamics ATLAS (Agile Anthropomorphic) humanoid robot and NASA’s Valkyrie (Val)
robonaut both of which feature prominent electric
blue central processors in their chests (see Figures
262 & 263). While the Lockheed Martin HULC
(Human Universal Load Carrier) system is an
untethered hydraulic powered exoskeleton which
promises “performance enhancement for

99 And isn’t the Iron Man (Favreau, 2008) the post-millennium Robocop cypher? A charismatic war profiteer in
an augmented metallic suit albeit with a robotic (electric blue) heart?
sustained capabilities” in the battlespace (see Figure 266). The suit is certainly reminiscent of the anthropomorphic augmentation worn by Matt Damon’s character Max Da Costa in the film *Elysium* (Blomkamp, 2013) (see Figure 267). And yet unlike *Elysium* in which such technology is considered brutal and primitive and employed to literally crash through the class system on an off-world colony, Lockheed Martin is producing an expensive and very exclusive top order augmented warrior system. In many ways this integration of science and fiction by Lockheed Martin, Boston Dynamics and NASA demonstrates a very obvious – and very violent – pathway towards a potential melding of human and device.\textsuperscript{100}

The present reality however is much more subtle. In the interim, as we construct the fantasies and the hypothesis of an impending robotic future simultaneously in the cinemaplex and the research laboratory, we defer to the personal A.I. charm we clutch in our hands. The smart phone device has emerged as the first personal simulation machine that has become intimately present in our everyday and increasingly our every moment; here the black mirror becomes a precursor to the robot that knows everything.

\textsuperscript{100} In late 2013 the United Nation’s Convention on Conventional Weapons added the issue of emerging “killer robots” to its agenda for 2014. As reported in Forbes there has been a campaign by 45 non-governmental organisations “to get fully autonomous weapons banned before computer scientists and engineers get a chance to develop them” (Parnell, 2013). The article makes clear the distinction that the affiliation of NGOs, *Campaign to Stop Killer Robots*, is campaigning against the autonomy of military robots not the engineering of robots for civilian purposes. “Currently, unmanned aerial vehicles – UAVs or drones – are still under some human control, being piloted from the ground for example, but campaigners believe that nations all over the world are moving towards systems with full combat control” (Parnell, 2013).
Does this ultimate digital object bring us then to the brink of a simulated present-future-space in which augmented machine intelligence is our downlink to the real and the keeper of human consciousness? Is the iUser in concert with ubiquitous personal device technology exhibiting en masse swarm-like behaviour? Are we witnessing the emergence of the networked hive’s most superior creation?

The Air Force Research Laboratory casts the hive mentality\textsuperscript{101} as a “leading edge technology” a collaboration of disciplines capable of “persistent and responsive precision engagement”. General Bedke’s characterisation of the U.S. Airforce drone army as an intelligent swarm that will sweep the skies with silent shock and awe is certainly an extension of the small mobile intelligent autonomous system and an illustration of the gothic high–tech sublime in full flight. In this idealised narrative of technological suprematism, military drones “are guided by autonomous programming that allows them to change their objective mid–mission like a flock of birds suddenly changing direction.” And alarmingly, if the will to autonomy is the first step in this process – and as the General’s statements date back to 2010 we must presume this has already taken place\textsuperscript{102} – then the long term agenda of shaping the theatre of war is even more compelling:

The dynamic battle environment that characterizes today’s warfighting is a major driver for these smaller, faster, less–expensive systems. But the general emphasizes that they are not being conceived to react to changes in the battlespace. Rather, the aim is for these systems to shape the battlespace to suit U.S. military goals. These future systems would bring new characteristics that would allow U.S. forces to exploit the battlespace (Ackerman & Bedke, 2010).

This goes beyond a mere reshaping of the systems of control, this is not purely an act of observation and surveillance by an autonomous system, this is the system literally assuming control. And the system in question is a military network of drones flying at high altitudes programmed to hunt and kill. This position then contextualises the gothic tendencies of millennial culture and

\textsuperscript{101} DARPA announced in March 2014 that it was developing a unified “hive system” to control swarms of autonomous aircraft, the program known as Collaborative Operations in Denied Environments (CODE) “is an effort to ready today’s relatively primitive drones for “dynamic” future conflicts, which the agency believes will be marked by “a higher level of threats, contested electromagnetic spectrum, and re-locatable targets” (RT News, 2013a). According to the DARPA press release, “Using collaboration algorithms, [drones] can provide services to each other, such as geolocating targets with long-distance sensors and guiding less-capable systems within their sensor range, providing multimodal sensors and diverse observation angles to improve target identification, transmitting critical information through the network...[and] protecting each other by overwhelming defenses and other stratagems” (DARPA, 2014).

\textsuperscript{102} See video documentation of autonomous drones in an article on The Atlantic website and drones operating in a swarm like capacity on the Nature website. Miniature combat aerial vehicles are also under development and prototypes can be viewed [here](#).
reveals that below the surface, beyond the illumination, beyond the screen lies a substance to the
darkness. The dark euphoric nature of the fall back to earth comes vividly into play. The liquid
electric is perhaps more than just a technological metaphor, it may yet function as a guide, a
directive or bi–product of something far more toxic – a laser sight perhaps – pinpointing the target in
the HUD of a drone strike orchestrated from a soft leather office chair in Florida and executed in the
dusty hillocks of north–western provinces of Pakistan. But it is in the example of Blade Runner (as it
is to some degree in Elysium) that the system employed to identify and pursue a replicant – and here
too once identified a target is killed on sight – is a nuanced hierarchal process based effectively on
race.

Social attitudes towards replicants are racist: a police captain refers to them as
‘skin–jobs’... Deckard tells us that this is the equivalent of ‘nigger’ in our own time.
Moreover, as in racist societies generally, a great deal of emphasis is put on the
making of ever finer distinctions between the dominant group and those believed
to be inferior. And this emphasis results from the increasing difficulty of sustaining
any clear or justifiable distinction between master and slave (Kuhn, 1990, p. 43).

With respect to a potential “targeted killing” by robotic drone strike there are numerous
criteria employed by the U.S. Military and the CIA when establishing an initial “kill list”103. This
doctrine of individual targeting is known as “effects–based targeting”. A “pattern of life” analysis is
undertaken to establish their involvement with an “organized armed group” verifying their “status”
and “effectiveness” within that network in order to create maximum disruption within their
organisation through their elimination. This information is kept digitally in what is known as an
Electronic Targeting Folder (ETF) or “disposition matrix.” This is digital fatalism at its most brutal and
most belligerent. Here the network becomes the stick by which we measure the effectiveness of an
act of killing, as Gregory McNeal observes; “While a single individual may be significant because of
his status as a member of an organized armed group, to the analyst, the target’s importance is not
based solely on his status, but more importantly on that target’s relationship to the broader
operational system.” (McNeal, 2013) Of course nationality, ethnicity, religious ties, geographical
location and race are factors in the establishment of a target. In the so–called War On Terror, the
hierarchal top–down mostly anonymous enterprise of drone warfare – something that occurs mostly
in secret and at a distance of tens of thousands of miles – the distinctions and prejudices at work are
as procedural – and lethal – as the identification and retirement of a replicant in Blade Runner. And

103 See New York Times article from May 29 2012, Secret ‘Kill List’ Proves a Test of Obama’s Principles and Will,
by Jo Becker and Scott Shane who first exposed the President’s direct involvement in counterterrorism
meetings with his top security apparatus, colloquially known as “Terror Tuesdays”, in which he personally
authorises “targeted killings” using unmanned drones (Becker & Shane, 2012).
yet what if the effects–based targeting for the drone becomes an internal inward-looking doctrine? Surely the paranoia which authored the power structures which made drone strikes possible – and by extension the more extreme science fiction cousins in the swarm films – must have conceived of a domestic battle space? The often quoted line from the U.S. Oath of Allegiance bears remembering: “to protect and defend the constitution against all enemies foreign and domestic” (emphasis added).

In 2002 the U.S. Army established the North Command (NorthCom) which has since had an annually refreshed on–call Combat Team to “provide command and control for federal homeland defence efforts and coordinate defence support for civil authorities” (Cavallaro, 2008). A study by the U.S. Military’s Strategic Studies Institute, “Known Unknowns: Unconventional ‘Strategic Shocks’ in Defense Strategy Development”, articulates the prevailing conditions by which the Department of Defense would be required to “fill the gap” with force in a domestic situation: “Widespread civil violence inside the United States would force the defence establishment to reorient priorities in extremis to defend basic domestic order and human security.” A range of pathways to mass civil unrest are contemplated including, “deliberate employment of weapons of mass destruction or

Figure 269 General Atomics MQ–1 Predator UAV drone (Wigglesworth & Associated Press, 2013) and (C. Anderson & Getty Images, 2013).

Figure 269 General Atomics MQ–9 Reaper UAV drone (Battlespace Flight Services, 2010).
other catastrophic capabilities, unforeseen economic collapse, loss of functioning political and legal order, purposeful domestic resistance or insurgency, pervasive public health emergencies, and catastrophic natural and human disasters are all paths to disruptive domestic shock.” The Department of Defense is advised that they, “might be forced by circumstances to put its broad resources at the disposal of civil authorities to contain and reverse violent threats to domestic tranquillity” (Freier, 2008). Matt Car writing in the journal *Race and Class* illustrates a variety of circumstances in which the U.S. Military and its various wings have employed virtual scenarios, computer based simulations and other digital means to construct the future battle space. This “military futurism” describes a pervasively apocalyptic future trend in both foreign conflict and domestic civil disobedience. Their scenario modelling focuses primarily on counter-insurgency based operations featuring urban close quarter combat and widespread mass destruction by rogue nuclear conflict and catastrophic weather events. But it is the urban space that is the most dystopic of these visions and most reminiscent of the gothic high-tech malaise:

This image of the city as the primary battleground of the future is a key element in the military dystopia. In these images of the ‘broken’ cities of the future, military futurism really shows its debt to science fiction, in its fusion of contemporary urban battlegrounds such as Mogadishu and Fallujah, the blighted slums of Sao Paulo, Rio de Janeiro and Port–Au–Prince with the ravaged cinematic cityscapes of *Robocop, Escape from New York,* and *Mad Max* and video games such as *Shadowrun: feral cities,* whose designers promise exciting virtual combat in ‘decaying urban wilds, war–torn cityscapes, and cancerous megabarrens’ in which ‘the usual rules and constants of civilized society don’t apply’ (Carr, 2010, p. 23).

Indeed, the digitalisation of the military’s future is embedded in the art direction of the broken mega–city and the dense atmospheric simulations designed to train the future combat soldier. In this space the imagery is designed to evoke the dystopian visions of science fiction cinema and video games – which for the most part are science fiction and for the most part dystopian – while the gameplay, although physically reminiscent of console gaming, is designed to simulate life and death scenarios are themselves based on a completely fictitious narrative projection born from darkest imaginings of military futurism. And so, while the image stream of dystopian films (*I Am Legend, Cloverfield, Battle: Los Angeles, Inception, The Avengers* and the *Man of Steel*) and games (*Homefront, Crysis 3, Modern Warfare 3* and *Call of Duty: Ghosts*) recall the destruction wrought on 9/11 through the simulation of that destruction and the navigation of its wreckage via a new layer of carnage, similar technologies are now being employed to train soldiers and pilots to exact that destruction’s revenge – both foreign and domestic. The visual narratives of these elaborate constructions would seem to have collided and mashed into the military futurist narrative of
domesticated urban warfare in what has become a shared virtual space of gothic high-tech assemblage.

Here the dominant ideological force is still active – the master and the slave relationship – compelled to pursue conflicts for nefarious geopolitical and economic motives: New Age Colonialism with a twist of terror. Carr cites security analyst Richard K. Norton’s 2003 article in the US Navy War College Review entitled Feral cities – the new strategic environment, in which “Norton’s depictions of the feral city recall an older dichotomy between civilisation and barbarism, cleanliness and defilement, law and disorder that has often been replayed in western depictions of the wider world.” And while Carr agrees it is not hard to imagine that some of the scenarios proposed by Norton for the collapse of mega–cities might indeed occur – Norton cites potential candidates Mexico City, Johannesburg and Rio de Janeiro – but “what is striking about the military dystopian imagination is not just the dark future that it conjures up but the assumptions that underpin its conclusions.” For Carr it is a startlingly dark and gothic self–fulfilling prophecy in which so–called “feral” inhabitants reminiscent of “mutant creations of H. P. Lovecraft crossed with extras from Black Hawk Down” regress to a brutal, untamed “pre–modern state of nature that no longer responds to anything but military force” (Carr, 2010, p. 24).

This type of fantasy, authored by a former naval commander working within a powerful and influential U.S. institution like the U.S. War College, perpetuates the myth and its associated anxieties, of an unstable future of literal class warfare. Under the watchful eye of an increasingly fragmented and lusty American military, a military ruffled by the debacle in Iraq and nervous about the “unknown” future, such apocalyptic fantasies are the narratives which keep the gears of industrial military complex in motion. This hysteria fuels the research and development arms of the military that continue to invest at an exponential rate in virtual, unmanned and robotic instruments of war. As artist Joseph DeLappe, instigator of The 1,000 Drones Project, observes of the potential ubiquity of robotics and drone technology:

There is something different about drones. They seem to perfectly combine aspects of our worst fantasies of digital technologies, interactivity, computer gaming and war. One might consider them a bit of a "gateway" weapon (the drug reference is of course intentional here). I suspect we have indeed opened a Pandora’s box leading to the further utilization of remote and robotized weaponry that will make our current drone usage seem quaint (Garrett & DeLappe, 2014).

In the next decade alone it is estimated that the U.S. military will increase its annual expenditure on drone capabilities from its current growth rate of US$6.6 billion to US$11.4 billion per year over the next ten years. At a time when the U.S. Military is scaling back expenditure on its forces
(Shanker & Cooper, 2014) total military spending on Unmanned Aerial Vehicle systems (UAV) will reach US$110 billion by 2020 (UPI, 2012). Meanwhile research continues at the U.S. Department of Defence research arm DARPA – and by a tight knit cohort of corporate military contractors such as Lockheed Martin, Raytheon Company, Northrop Grumman, General Atomics and Boston Dynamics – into modes of robotic and virtual warfare. As Carr ominously notes:

The Pentagon is currently seeking contractors to provide a ‘Multi–Robot Pursuit System’ that would enable packs of robots to ‘search for and detect a non-cooperative human’ – a proposal that Steve Wright, a robotics expert at Leeds University, described as ‘the beginnings of something designed to enable robots to hunt down humans like a pack of dogs’. All these preparations may be paving the way for a future every bit as inhospitable for human beings as the one they are supposedly intended to prevent (Carr, 2010, p. 28).

Within the cinema of clones, the U.S. Military’s desire for autonomous warfare, the megalascopy of ubiquitous machine vision and the flipping of the master/slave power structure the texture and direction of the neo–gothic narrative becomes clear. The language, the visual iconography and the science fiction aesthetics comingle to form a techno-cultural condition that is dark, constant and devolving the human enterprise. What we are seeing, according to Adam Rothstein, is the emergence of the politics of cosmological capital as a present–future archetype:

Drones’, as we have come to know them, represent an intensely collapsed political, economic, and social cosmology. They are singular points of world–
historical militarism, state control, and technological specialty, orbiting high above our heads, the new astrological wanderers of our mortal fates. The MQ–1 Predator, MQ–4 Global Hawk, MQ–9 Reaper, RQ–170 Sentinel: these names are the basis of a new hierarchical choir of angels (Rothstein, 2012).

In this regard, the drone, the clone, the automaton are part of a hierarchal system pre–ordained to lock down our field of vision thereby redirecting the horizon line and appropriating the “synthetic images created by the machine for the machine.” (Virilio, 1994, p. 61) If we cringe at the language of “targeted killings” and “battlespaces”, of “kill lists” and “precision engagement” then “unknown unknowns” becomes a desirable defence. For given privilege to such things, if we were to imagine them as evocative digital objects in the game space – the blood of children and the rubble of lounge rooms and the stench of rotting corpses – the simulation would be too real. The shock is not real because real doesn’t exist. Not on my television, not on my Facebook page, and most likely not on yours either. Certainly, like the broader gothic high–tech dreamscape it weighs heavily on one’s consciousness, even if we have trained ourselves not to acknowledge it, even if we have built a technological barrier – a black mirror – to contain it, to compress it, to digitise it. Discussing Benjamin, Fredric Jameson observes how, “modern society, perhaps on account of the increasing number of shocks of all kinds to which the organism
is now subjected, these defence mechanisms are no longer personal ones: a whole series of mechanical substitutes intervenes between consciousness and its objects, shielding us perhaps, yet at the same time depriving us of any way of assimilating what happens to us or transforming our sensations into any genuinely personal experience” (Jameson, 1971, p. 63).

Are we thereby absolved of these tragedies through our dislocation via the mediation of the screen and the fragmentation of the network? Is this the end–game of the postmodern condition of evolutionary succession – the human with the robot, control with the control room, the blue planet with the red planet – is it in fact in the process of destroying itself? Where will all the drones go when they reach the end of the kill list, where will the Hellfire missiles be pointed next, how far the reach of the “gigantic phantom limb of humanity”? And what of us then, up here on the off–world, the distracted tormented iUser subjugated to the earthbound perspective of machine vision? Which simulation do we prefer in the Cyber City of our discontent? Have we become Virilio’s “lounge lizards” bobbing in our weightless obesity on the spacecraft Axiom that dystopian ark of vulgar humanity from the film Wall–E? (Stanton, 2008) A place of hyper–consumerism and extreme inertia, where neon signs scream “Eat Eat Eat” and “Buy Shop Live” and “Buy Eat Play” where holographic screens hang permanently in front of passenger’s faces the permanent image loop advertising products, services and food (see Figure 277). As Virilio reminds us, “since the wave of electromagnetic fields flooded the earth with audiovisuality, not only has the skyline been locked down in the rectangle of the screen, of all the screens, but the spectator has now morphed into a televiewer who stretches out or, rather, lies down in front of it” (Virilio, 2007, p. 23). And indeed, here they are, reclining in the spacecraft lounges in their spacecraft suits sipping their spacecraft

Figure 277 Wall–E (Stanton, 2008).
sodas waiting for Tarkovsky’s Zone to reclaim the scorched Earth below so they may one day heroically return to the green field of some impossible ancient Utopian ideal (Tarkovsky, 1979).104

Until then, we look down, away – anywhere but up – locked in on the earth below, while our machines assume an authoritarian control, executing their stealth–like dominance over the blue planet. The paradigm shift in attention and perspective is altering dramatically, as the technologies of scientific investigation, of global entertainment services, of communication networks, of transportation infrastructure and military domination focus their sensors upon the image of the earth. This new earth aesthetic is converting the earth into a quantifiable digital object whose properties constitute a rich digital surface tapestry. The Geo–Eye satellite network circles above – the master view – cataloguing the urban grid, fetishizing the “digital globe” at 34cm square earth pixels, while NASA’s Landsat 7, ASTER and MODIS satellites look down measuring changes in the texture and fabric of the earth’s surface mapping our viral march across its surface. At ground level the vision machine penetrates the human experience in a networked world. CCTV cameras produce vast detailed patchworks of urban panoramas with the potential to create a rolling video document in multiple dimensions; Google Street View is devouring the landscape, the street, the sidewalk, the suburban front yard, the farm and the highway, as Jon Rafman observes: “Google Street Views present a universe observed by the detached gaze of an indifferent Being. Its cameras witness but do not act in history” (Rafman & Conroy, 2009); facial recognition software performs identity drills interrogating the image – looking in–at–through the pixels under our skin; “on–body video” cameras are giving law enforcement permanent memory banks – a wide screen 1st person point of view of the suspect, the crime, the moment – instantaneous evidence; the iRobot PackBot infiltrates the environment to capture, document and control the uninhabitable, the hostile and the toxic. This is the ultimate form of digital aesthetic, the earth as pixel and our reality as 3D video space.

From beyond the stratosphere or behind the lens of the surveillance object context and meaning is impossible to define, morality an absent figure as the edges of the frame recede into infinite space. These vision machines and their petabytes of data are of course significant digital objects by themselves, yet together this awesome database of images constitutes a dense archive of machine truth; their exactness, their resolution and their complexity making the simulation the reality. This is the real cyberspace, the Cyber City’s most intense augmentation. This is the Universe’s

---

104 Based on the 1972 novel by the Strugatsky Brothers, Roadside Picnic, Russian filmmaker Andrei Tarkovsky created the iconic film Stalker in 1979. Featuring the common Utopian trope of a “return to the green fields” as its central novum, “the Zone is visualised as a Chernobyl–like scarred, post–industrial landscape of ruins, waste, rubbish, of the remnants of industrial civilisation corroded dilapidated and rapidly being reclaimed by nature.” To be found in this place “is quite literally the answer to all human wishes, something which in the last instance holds the promise of eternal happiness for all humanity” (Hatherley, 2008).
memory planted in the network by the machine – the earth as replicant – the ultimate blue planet assemblage.

/////\\

In the final chapter I examine the work of several media artists, Trevor Paglen, James Bridle and Thomas Ruff, who work at the edges of machine vision and tackle the politics of optics and surveillance directly through their arts practice. While I do not discuss my own creative work at any great length in this passage it should be understood that the aesthetics and structural dynamics of my photographic series Dark Euphoria is strongly influenced and thematically linked with the work of Paglen, Bridle and Ruff. To close off this visual exploration of neo-gothic narrative I describe my own personal excursion into America’s most explicit rendering of dark euphoria, Ground Zero.
04 :: 04 Ground Zero

Trying to explain the mystery, Castel suggests that our acute feeling of insecurity derives not so much from the dearth of protection as from the inescapable ‘unclarity of its scope’ (ombre portée) in the kind of social universe that, like ours, ‘has been organised around the endless pursuit of protection and a frantic search for security – thus setting ever rising, previously unthinkable standards of protection, always ahead of what is currently possible to achieve.’ It is our ‘security obsession’, and our intolerance of any minor – even the tiniest – breach in security provision which it prompts, that becomes the most prolific, self-replenishing and probably inexhaustible source of anxiety and fear.

- Zygmunt Bauman from Liquid Fear (Bauman, 2006, p. 130)\textsuperscript{105}

Stepping into this remix is the media artist. The accumulation of Big Data and the seemingly unregulated, mostly secretive and always invisible methodology employed for its collection, has become fertile ground for the research practitioner. Media artists and interrogators of the digital object such as Trevor Paglen, James Bridle and Thomas Ruff seek to reintroduce a distinctly human aspect into the image loop by revealing the process of data collection and the scale and the makeup of the technological apparatus which facilitates its collection. By alluding to comparisons of scale and documenting physical evidence of the human cost (Bridle), exposing the existence of the technology through its remoteness (Paglen) or pulling apart the data and the objects they create to obscure the obscured (Paglen & Ruff) such artists are attempting to make visible the unseen and contextualise the unknowable.

James Bridle is a designer, publisher and critical media commentator who created somewhat of an internet sensation at SXSW in 2012 when he lead a panel discussion on what he had been exploring on his Tumblr blog as the “new aesthetic” (Bridle, 2013b).\textsuperscript{106} Broadly speaking the new

\textsuperscript{105} Includes a quote from Robert Castel’s Social Insecurity: What Does it Mean to be Protected? 2006, Buenos Aires, El Manantial (Castel, 2006, p. 5).

\textsuperscript{106} See Bridle’s Tumblr blog which setup his theoretical ideas surrounding a new aesthetic and the premise of the SXSW panel, The New Aesthetic: Seeing Like Digital Devices. Also see Joanne McNeil’s discussion of her involvement on the SXSW panel. Bruce Sterling who was present at the panel, albeit in the audience, posted a critique some weeks later, An Essay on the New Aesthetic (Sterling, 2012). it can be found here and a short interview with Sterling on the new aesthetic by David Cox can be found here.
aesthetic could be defined as media design and art making with technology – or evidence of the machine in the production process. This contrasts with Lev Manovich’s description of computer mediated art making in which the presence of the machine is mostly hidden, any mechanic inflection unwanted, any discernible evidence of its operation mostly undesirable. There is also a will towards autonomous design by machines that permeates some of the discussion around the term’s legitimacy but echoes wider concerns about authorship and data driven art making. This places Bridle perfectly at the centre of the debate about both visible and invisible technologies of surveillance and autonomous warfare. Two of his most recent projects have been directly concerned with the notion of the UAV and the implications of their use:

The drone, for me, stands in part for the network itself: an invisible, inherently connected technology allowing sight and action at a distance. Us and the digital, acting together, a medium and an exchange. But the non–human components of the network are not moral actors, and the same technology that permits civilian technological wonder, the wide–eyed futurism of the New Aesthetic and the unevenly–distributed joy of living now, also produces obscurantist “security” culture, ubiquitous surveillance, and robotic killing machines (Bridle, 2012d).

107 Further to this see Rob Myers’ arts review, Data-Driven Artists and Their Critics, on the FurtherField.org site (Myers, 2013a) and the article which inspired the Myers piece, Controversial New Project Uses Algorithm To Predict Art, at Huffington Post’s Arts and Culture site.
Bridle’s Dronestagram project is an Instagram site to which he posts landscapes from Google Earth’s satellite service of U.S. drone strikes using the data provided by the Bureau of Investigative Journalism (see Figure 279). He cites the names of towns, of houses, of intersections, of farms and of schools in Afghanistan, Somali, Pakistan and Yemen which have been targeted by drone strikes. Where possible he lists the dead – civilian, militant or combatant. This evolving patchwork is of another reality. The satellite images feature place names – Wadi al Abu Jabara, Beit al Ahan, Bulandkhel, Hurmuz, Khaider khel – towns and villages to which the all-seeing covert drones point their instruments of machine vision. “They are the names of places most of us will never see. We do not know these landscapes and we cannot visit them. What can reach them are drones, what can see them—if not entirely know them—are drones” (Bridle, 2012b). What can end them are drones. Bridle’s photographic assemblage, The Light of God (Bridle, 2012c), comments on this process of covert, distant, silent targeting. Bridle was inspired by the term after it appeared in an experimental documentary film by Omer Fast, 5000 Feet is the Best, in which a drone operator explains the Light of God phenomena (see Figure 280). Using a thermal camera to identify the target area, the operator locks the drone’s targeting system onto the site using a laser targeting marker which in turn calls in a Hellfire missile strike. “We just send out a beam of laser and when the troops put on their night vision goggles they’ll just see this light that looks like it’s coming from heaven. Right on
the spot, coming out of nowhere, from the sky. It’s quite beautiful.” (Fast, 2011) This is an exquisitely
gothic and harrowing image that Bridle presents in conjunction with Fast’s documentary interviews
with the drone operators. The light on dark aesthetic of drawing down a missile strike, evoking the
angelic light of a Christian God in a Muslim land underlines the broader complexities at work in the
technocultural narrative of the new millennium. Fusing the liquid electric beams sent up by the 9/11
Anniversary Memorial, *Tribute In Light* (see Figure 280) with the image of the reciprocal targeting
laser of *The Light of God* this new image juxtaposition becomes the ultimate convergent gothic high-
tech object – the smashing together of science, fiction and religion. All of it frozen in that moment of
machine assisted night vision – a dark euphoric luminance of imminent, absent and anonymous
destruction. For Bridle the importance rests on putting that snapshot in our vision stream. His public
intervention, *Under the Shadow of the Drone*, in Istanbul in 2012 places the concept of the drone – a
surveillance take–out service used by the Turkish military on its neighbours in exchange for the U.S.
military’s use of its air strips – at the feet of the pedestrian.108 Bridle and his colleagues sketched out
a 1:1 outline of a MQ–1 Predator UAV at the foot of a Greek Orthodox church across the road from
the Istanbul Design Biennale which Bridle was attending at the time (see Figure 281). While drones
cruise at an altitude of
between 5000 and 50,000
feet and rarely cast a
shadow that is seen,
Bridle’s work places the
shape and dimensions of
the drone in the public
thoroughfare. The point
for Bridle was not only
exposure – to make
visible that which is
unseen – but also context,
“trying to get a feel for
what it would be like to
stand next to one. To stand before, or under, it... the ability to touch the cold metal of it, to measure
oneself against it.” (Bridle, 2012d) For it is this visibility, this taking back of the unseen dimensions
and machine physicality of the network’s outer limits that fosters empowerment, as Bridle observes,
“those who cannot perceive the network cannot act effectively within it, and are powerless. The job, then, is to make such things visible” (Bridle in Harger, 2011).

The political and practical possibilities of drone strikes are the consequence of invisible, distancing technologies, and a technologically–disengaged media and society. Foreign wars and foreign bodies have always counted for less, but the technology that was supposed to bring us closer together is used to obscure and obfuscate. We use military technologies like GPS and Kinect for work and play; they continue to be used militarily to maim and kill, ever further away and ever less visibly (Bridle, 2012b).

This too is what drives the drone sleuth–like behaviour of geographer and media artist Trevor Paglen who uses camera and imaging technology to pull back the veil on the drone network and the communication and surveillance systems of the U.S. Military and the U.S. National Security Agency. He watches those who watch us. His *Untitled (Drones)* (Paglen, 2010b) photographic series of UAVs in U.S. airspace for his 2011 exhibition *Unhuman* in San Francisco accentuates the secretive properties of the drone by deliberately making them an obscure blip on the canvas. But it is essentially about how Paglen the photographer sees the drone that helps us understand what seeing the technology in situ actually means. “I’m extremely interested in what...
seeing is, and what seeing means in the contemporary moment. Of course, this has everything to do with machines, which in turn has everything to do with time” (Curcio & Paglen, 2011). In the freeze frame of the captured still image the drone becomes a seemingly innocuous object against the vastness of the beguiling skycapes they inhabit (see Figure 282). These constructions of the digital network could be the medium itself, evidence of its processes and technical limitations: dead pixels in an LCD monitor, chromatic aberrations in the perfection of the high-def simulation, ink spots on a canvas, air bubbles on a geologist’s slide. But what they are in fact is a record of a digital object that for all intended purposes actually isn’t there, it’s off the record, incognito – the secret training drill, the cyborg top gun rehearsing for the kill. Paglen sees the irony here, but also the convergence between the technological modes of photographic image production and the technological modes of surveillance and targeted killing.

I think they’re part of what we might call the spatio-ethical dimension of the images’ conditions of production, rather than
the aesthetic part of them. Sometimes the ‘entangledness’ of the photograph can arise from these complex relations of seeing and counter-seeing in my work (i.e. photographing spy satellites or Predator drones photographing me), but not always. Sometimes the relational dimension can arise from the very fact of taking a photograph of something that, for political purposes, ‘isn’t there’ (Curcio & Paglen, 2011).

Paglen’s studies are as much related to air space and the spatiality of the screen as they are about distance of camera to object – or in this case lens to lens – as well as notions of time, specifically the exposure of what we can’t see that time permits. Like a drone that hovers evaluating a target Paglen lurks in the foothills of Nevada and Arizona hunting the source, tracking the trackers. His long lens photography brings the drone closer yet keeps it at a menacing blurry distance. Like the filter on an Instagram image, or the flecks of magnetic interference on a VHS tape, the drone becomes more real for the image’s lack of clarity as the technology of domestic – i.e. earth–bound camera technology – strives to see where it should not see (see Figure 283). Paglen’s studies, They Watch the Moon (Paglen, 2010a) and The Other Night Sky (Paglen, 2007) employ long exposure photography to reveal that which lurks in the dark. These are mysterious images of an unsettling techno–futurist space dreaming. Here before us is the military apparatus – the satellites, the ground based radar, the electromagnetic perimeter – that make remote death and domestic surveillance such a precise and totalising business. But somehow these images are also absorbed into the broader cultural narrative, their science fiction properties becoming obvious over time as Paglen’s framing and scenic compositions echo the geography of both the fabled mountain in Close Encounters of the 3rd Kind (Spielberg, 1977), and the planetary bases embedded in the original Star Wars universe (Lucas et al., 1977-1983) (see Figures 284 & 286). The compositions are evocative digital objects, the physicality of their location and the art direction of their composition embellish the sci–fi dreamscape but also the evolving narrative of Millenniandomernity’s most bold expositional tricks – the abstract simulation. For me the aesthetic touchstone of Paglen’s work is The Fence (Lake Kickapoo, Texas) (Paglen, 2013) which is compositionally evocative of my Dark Euphoria series (Goodwin, 2011b) of images (see pages 34, 159-161 & 196). Both works seek to expose the production process of capturing light and interrogate the fabric of the digital image itself in its printed form. Paglen’s work is produced from analysing the microwave frequencies of a powerful radar system surrounding the United States. The end result is an exploration of the limits of photography in much the same way that the Abstract Impressionists explored the texture and form of the painting process, the properties of oil and acrylic paint becoming as important as the emotional forms they helped to communicate. Essentially, The Fence is captured by making normally invisible light frequencies visible and thereby capturing the unseen and expressing this in vivid rich
chromatic textures. The subject, as Paglen explains, is an “electromagnetic border that extends far into space from transmitters in Alaska, California, Texas, Massachusetts, Greenland, and the United Kingdom. The Fence is designed to track spacecraft overflying the United States and to serve as an early warning system to detect ballistic missile launches” (Paglen, 2013). This is a constant permanent structure of virtuality, a network of immense size and of immense data processing capabilities, but essentially invisible. Paglen is attempting to describe what the skies above us contain, and to point out that we are essentially contained within that sky. His images hint at what the devices that populate our orbit are rehearsing for. By looking up at those who look down he is subverting the dominant perspective. What Paglen and Bridle are essentially attempting to do is to avert a complete disconnection. As Julian Oliver has warned, “Our inability to describe and understand reduces our critical reach, leaving us both disempowered and, quite often, vulnerable” (Huff & Oliver, 2012). The promise of an unhuman autonomous robotic future is a troubling place to be, we grow distrustful of the sky, the networks we communicate on and the geography of the land we walk on. As Peter Sloterdijk

![Figure 286](mos-eisley-star-wars-episode-iv-a-new-hope-lucas-1977.png)

Figure 286 Mos Eisley, Star Wars Episode IV: A New Hope (Lucas, 1977).

![Figure 287](trevor-paglen-they-watch-the-moon-paglen-2010a.png)

Figure 287 Trevor Paglen’s long exposure image They Watch the Moon (Paglen, 2010a). A classified “listening station”, part of the U.S. National Security Agency’s project ECHELON network.

![Figure 288](trevor-paglen-the-fence-lake-kickapoo-texas-paglen-2013.png)

Figure 288 Trevor Paglen’s The Fence (Lake Kickapoo, Texas) (Paglen, 2013).
writes, “We remain immanent to that which is suspect. We are condemned to being-in, even if the containers and atmospheres in which we are forced to surround ourselves can no longer be taken for granted as being good in nature” (Sloterdijk, 2009, p. 108).

German photographer Thomas Ruff, works with a range of experimental photographic forms and techniques, and much like his contemporaries Peter Mann and Corinne Vionnet, the appropriation of images from a variety of public venues including the internet. For Ruff and co the human experience is contained in the images which constitute our mediated atmosphere. For Ruff the process of signal compression in the exchange of visual information on the network presents an opportunity to expose its technical deficiencies by close examination of the image file’s structure. His Jpegs series is a confronting sequence of images which exploits the artefacts left behind in a digital image from the process involved in compressing the image for display on screens and publication on the web and mobile. Ruff exposes the fabric of the digital object through enlarging the image to an extreme size and then printing that image onto large canvases (2.5 by 1.8 meters) to further accentuate its inherent flaws. “It creates a nice effect,” Ruff notes, “when you see it from about 10 or 15 metres away, you think you are looking at a precise photograph, but if you go closer, to within about five metres, you recognise the image for what it is. Then if you go really close, you can’t recognise anything at all: you’re just standing in front of thousands of pixels” (Ruff, 2009).

Figure 289 From Thomas Ruff’s Jpegs series, jpeg–ny02 (Ruff, 2013).
In this sense the networked image is vulnerable to the ultimate form of corruption and mistreatment – enlargement. The algorithmic compression fabricates what it cannot see creating colour and shape that is an approximation the image’s version of reality. This is the inverse of the Geo-Eye satellite in which clarity and resolution is the yardstick of truth and where the absence of the artefacts of compression – the lack of image corruption – renders the simulation real. Here in the Jpegs series the truth emerges from the approximations made by algorithms, the distortion becomes the memory. This is something that film maker and academic Hito Steyerl writing in e-Flux identifies when she describes the degradation of a digital object in the network as a “bad image” (Steyerl, 2009). In an era of high definition display and ever increasing resolutions of digital photography Ruff’s series is emblematic of what constitutes a bad image. And while Ruff is playing with the fatalism of the digital form – after all there is only so much resolution one can attain from the available data, the pixels have only so far to fall – in the travails of the network it is a but “a copy in motion. Its quality is bad, its resolution substandard. As it accelerates, it deteriorates. It is a ghost of an image, a preview, a thumbnail, an errant idea, an itinerant image distributed for free, squeezed through slow digital connections, compressed, reproduced, ripped, remixed, as well as copied and pasted into other channels of distribution” (Steyerl, 2009).

While Ruff is exploring notions of disruption in the distribution and reception of digital images on the network – an unseen invisible process – he is also bringing the fragile memory of catastrophe and notions of the imagined apocalypse together in a provocative convergence. The pixelated squares of the manipulated jpeg images become the building blocks of a reconstituted past and a plausible future. It is as if these machine images have been reclaimed by human intervention, stripped of their clarity when viewed up close they become personal constructions – abstract things of discovery, messy human constructions. And yet they become clearer and therefore more real the further we are away from them reminding us that most of our memories are images made stored and distributed by someone else’s machine at a distance. To see then, is to understand.

Figure 290 From Thomas Ruff’s Jpegs series, jpeg co01 (Ruff, 2004).
This was my first experience at Ground Zero. The return to the accident as media archetype – the image loop personified. The site that constitutes the ultimate looking down – the gaze of the machine – peering back into the belly of the 20th century. To be there in that place at that time, March 25 2013, was my second chance. Six months earlier I was evacuated from New York City, when during a preview screening of a pre–release cut of Lincoln (Spielberg, 2012), hosted by Mr Spielberg himself, to my surprise I began coughing up spots of blood. Back at the hotel it got worse, it was thick and dark and reeked of rotten meat. It was nearing midnight on the U.S. East Coast but it was only 8am in Australia, the office wouldn’t open for another half an hour. Plans needed to be made and flights needed to be booked. My feverish Webjet searches turned up the most economical option, a Cathay Pacific flight from JFK to Melbourne via Singapore. It left at lunchtime in New York, a hellish 32 hour ordeal. The flight’s departure time roughly correlated with the time I had booked my tour of Ground Zero. Instead I bought a face mask, a box of tissues, and some nasal spray to keep the airways moist. I left the AirBnB apartment with a few more days still on the clock and dragged my arse to the sidewalk. Sinking into the back of a yellow taxi I swallowed hard. 32 hours spitting into a stainless sink at 30,000 feet. Fuck.

I wouldn’t be certain of my health for almost another year. A left lower lobectomy, would put me right. But in the meantime, I wrangled the funding to return to America and to make the pilgrimage to Ground Zero. It was totally unsurprising the sense of absence the site engendered. It is after all a thing of absence. No images, no billboards, no holographic tour guides, no expositional video kiosks to detail the history. Which is an odd thing. Vincent Mosco, in his text *The Digital Sublime: Myth, Power and Cyberspace*, makes the link between Castells and the symbolic significance of the original World Trade Centre: “The World Trade Center and especially its twin towers was a first attempt to create a hub for what Manuel Castells has called the Informational City, a space of flows or portal that simultaneously produces, manages and distributes data, messages, and ideas. People began to call New York a Global City to describe its ability to command and control the international production and distribution of resources, particularly information.” And then this: “It would indeed provide the first genuinely utopian space of the information age” (Mosco, 2004, p. 144).

Peering down at the solid black granite blocks, swollen walls of crystalline water endlessly gushing over them and into the pit below, it is hard to imagine such a thing now. The site is so very

---

109 What was in abundance however was security, and lots of it. For a solid granite and steel memorial the queues, bag checks and body scans seemed excessive and was very unsettling. For a media artist committed to documenting the site it was also problematic. I had a Crumpler backpack stuffed to the gills with tech: a DSLR camera, mini-tripod, 28mm and 50mm lenses, a Zoom audio recorder, shotgun and lapel microphones and a Mac Book Pro. This is my kit. This also caused me no end of suspicion and interrogation. I was ghosted throughout my time at the memorial by two of New York City’s finest. “I am here to capture the atmosphere” I said, “to remember but also to create.” It was a difficult couple of hours.
Figure 291 *Ground Zero* (Goodwin, 2013)
masculine and ancient and modern in the same instance. Rock from the bowels of the earth, from some geologically violent time have been cut by machines to create the smooth hard lines of the modern memorial. Granite: forever, time unbroken, memory bounded by the history of the earth’s cosmic birth. A weighty assumption, but the right one, to be in this place is to feel the weight of a moment that shifted the collective consciousness of four billion people. The universe could barely weigh as much. Dark matter surrounds me; constituting the galactic network supporting everything else. The absence of evidence that constitutes Ground Zero, is the rock upon which the dark euphoric moment was most certainly first written.

And yet what is most striking about being at the edge of the memorial’s hulking interior – leaning self-consciously, and perhaps somewhat disrespectfully against the names laser etched into the ledge overlooking the watery abyss – is that there is no sight of the bottom. The water feature becomes an echo chamber of unprecedented depth, endlessness and repetition the most explicit of signifiers of what one might imagine a millennium to represent. We must presume that as long as the water flows, that the mechanisms of the long now, will outlast the video loop and the media archive. This place you could imagine will one day swallow all data.

September 11 provided an insignificant yet much vaunted death toll and a gruesome if not thrillingly voyeuristic assemblage of the end times. As the death toll grew, visualisations of flight paths emerged and sketched identikits of the ‘known assailants’ flashed across the world’s screens, the true trauma of the last great television event of the 20th century was lost in repetition and rapid machine translation. Gothic high-tech personified. It haunts the web as all great contemporary paradoxical stories do but it remains largely hidden from the mainstream venues of cultural production except for the gaudy exaggerated simulations. Mogadishu, Iraq, Aceh, Darfur, Mumbai and Haiti represent complex human concepts – injustice, racism, greed, fear, alienation – yet they rapidly become mechanically exposed image sequences, crude pixel renderings from DV cameras, mobile phones and hotel webcams. The previous centuries’ mono cultural television event has been transformed into a content on demand disaster portal. The depth of our understanding of these events is at once embellished by image frequency and dulled by over exposure. This is not just the media itself, but the mix of that media, the blend of content – opinion, hysteria, hype and paranoia (other fairly notable human concepts) – which constitute not just the web experience but the mass media’s interpretation of what the mix looks like. This complex layering of content and associated streams of meaning (data) presents a contemporary audience with a difficult translation. How do we define that which is in front of us? Are we experiencing the apocalypse or its simulation? Are we holding it in our hand or walking through its evolving catastrophe? Technoculture has become an intricate totalising narrative: the medium, the message and the meme. In this space of flows sight
has become mechanised, space militarised – time meaning and reality collapsed into a digital simulation. Nation states dissolve into wikis, faith into terror cells, race into genetic code, humanity repackaged as a distributable sequence of digital objects. The speed of this transformation – the acceleration of the global contraction and the fatalism of its digital authorship – inhibits our conceptualisation of the final image. It becomes dark – blank - a dead link like the black granite pixels of Ground Zero.

In the post 9/11 world, the romance of Armageddon is being replaced by the spectre of inevitable destruction, albeit on a smaller scale. Piece by piece, city by city, landmark by landmark, the delicate balance of post–World War II nuclear politics has given way to a new war, in which atomic bombs, capable of decimating an entire metropolis in just one blast, fit in suitcases. The global apocalypse depicted by Stanley Kubrick in 1964’s Dr Strangelove now seems simultaneously remote and infinitely more tangible. (Dixon, 2009, p. 156)

Echoing Virilio, Wheeler Dixon suggests that while we have gained a profound ability to conceptualise the end times we have lost the ability to see beyond the apocalypse: to see without going there, to see. To perceive without really being there.  We have brought Žižek’s moment of endlessness upon ourselves via the creation of systems of machines that do our bidding somewhere between a thought, its expression and its eventual remediation. We have unwittingly co–opted the magic of the technology marketeers into the media of our socialisation and the language of our most rudimentary chores. The shaman-like mastery of the Futurist narrative has penetrated the socio–political space while far more nefarious technological agendas have snuck in behind them. Meanwhile the iUser examines the black mirror with a seriousness reserved only for it, dutifully swiping and tapping at its surface submitting to the interface parameters of the machine hive. From the stars to the ground beneath our feet we reconfigure the control room to plug directly into the simulation. We keep our devices close, the screen’s radiant warmth our enduring companion. The cameras dutifully record, the satellites ping us from above. Without looking, and while never knowing, we pin our hopes on the invisible. These things, these digital objects, these robots in the garden.

Vincent Mosco highlights this techno-cultural myth making that has perpetuated this transition from star gazers to screen savers: “The thorny questions arising from all the limitations that make us human were once addressed by myths that featured gods, goddesses, and the variety of beings and rituals that for many provide satisfactory answers. Today, it is the spiritual machines

110 Paul Virilio from The Accident of Art (Virilio & Lotringer, 2005, p. 8).
and their world of cyberspace that hold out the hope of overcoming life's limitations” (Mosco, 2004, p. 78). The simulation, the virtuality of the Cyber City, becomes our new techno-cultural frame of reference, a mimetic machine discourse of augmented objectivity and cautious ecstasy. Thereby feeding the anxious gothic tone of the contemporary condition both within the society it watches and archives and within its artistic expression of trauma and detachment. As Virilio cautions, this detachment risks reducing our capacity to comprehended notions of truth, our perceptive engagement diminished “in the face of a common reality that not only outstrips us in a tyrannical fashion, but literally outpaces all objective evaluation and thereby all understanding” as we stand perilously on the ledge overlooking the incomprehensible endlessness of our time (Virilio, 2005, p9).

This situation creates a distinct boundary around our corporeal self that also encompasses the devices and screens through which the iUser interprets and interacts with the vectors of the mediated world. This isolation defines the simulation as much as it co–opts its construction within our social and psychological perimeter. Daniel Miller citing Guy Debord in his essay On the Post–City writes: “In the age of the world picture, the ‘great Outside’ is screened out; individuals become sealed inside segregated realities, fed by wire pipes of specifically calibrated information. Everyone at the centre of their own virtual universe. Every bastard a king” (Miller, 2009).

And so the dark euphoric moment is here. 2014. Each of us masters of the universe, as Stewart Brand claims, in the introduction to the first 1968 Whole Earth Catalog, if “we are as Gods, we might as well get good at it” (Brand & Brockman, 2009). Yet we are also specimens in a much larger experiment, of domination and analysis. The manifestos of a century of techno-futurism that embolden the cyborgian promise of interconnectivity and man–machine symbiosis is not the streamlined liberation we had expected. Instead, the image loop of horror upon horror spirits away our willingness to see and to engage.

Meanwhile the rain falls with an acidic pang, the river breeds blood red algae and the unfed masses melt into the landscape. Billions of dollars are spent constructing the dystopian landscape of the future and billions more are spent accessing its dark visage, but in a mouse-click the full catastrophe of life is only a URL away. And yet we do not go there – not often. Sometimes we sit there, in the dark like the Mark Zuckerberg character at the end of David Fincher’s The Social Network (Fincher, 2010), dutifully hitting the refresh button, waiting for a sign, a signal, a gesture, something. As Peter Sloterdijk observes:

So, in the age of atmospheric toxins, strategies, and hidden agendas all such quasi–religious consenting to place one’s trust in one’s primary surroundings – be in nature, the cosmos, creation, homeland, situation, etc – takes on the guise of an invitation to self–harm. Advancing explication not only forces a semantic change in the meaning of naivety, it means that it becomes increasingly in–your–
face, and even objectionable; the naïve, nowadays, is that which encourages sleepwalking in the midst of present danger (Sloterdijk, 2009, p. 108).

The colour palette of the techno-cultural narrative which began with the chromatic colour experiments of the Futurists and continued a century later with the electronic manufacturers of the millennial fire sale has darkened, not just on the surface but deep into the wire mesh. And as we fall, as we absorb these objects of our techno–cultural genesis, as we look down at the future hurtling up towards us, the present seems awash with data and light of an uncertain origin. But we shall never really feel the crush of the fall, the velocity of the impact. That, it would seem, is happening elsewhere.
04 :: 05 Conclusion

At the outset of this investigation I developed a theory that the culture I was witnessing at the cinema, over the internet, in the gallery space and through the mainstream media was displaying a discernible aesthetic darkness. Of course, such tendencies have been a constant presence but more concealed, less obvious, here I was seeing them writ large in the most popular and the most well attended mediums. It was also obvious that this darkness was emerging in parallel to a transition to a distinctly more technological mode of image construction and that the machines responsible for making this possible were also weaving their own aesthetic attributes into the mix. Attributes we might recognise straight away as high-end computer graphics, subtle image manipulation or the seamless integration of the virtual into the real, but also the inevitable anxieties that such ubiquity engenders. The fact that notions of machine vision and network culture were seeping into the fabric of the stories we tell and the futures we design should come as no surprise, but the fact that this was having unexpected aesthetic consequences was indeed something new. Characters, narrative constructions, art direction and the graphic symbolism of contemporary media were telegraphing a gothic anxiety present both in the society from which they had sprung but also the technologies that delivered them. Moreover, other theorists and writers such as Bruce Sterling, Slavoj Žižek, Zygmunt Bauman and Paul Virilio were observing much the same thing albeit from very different perspectives – and in Virilio’s case, over a much longer stretch of time.

Certainly Sterling’s observations at Reboot 11 in 2009 and other appearances he made during this period permitted me to articulate what I was thinking in a much clearer and more coherent fashion. And while Sterling was delivering his observations via a much narrower prism of a particular technology or cultural behaviour it was clear something tangible was in the air. The concepts of dark euphoria and gothic high-tech captured this well, but looking back made the present cultural conditions all the more visceral. And so while Sterling looked forward at the coming decades – the “twenty teens” – highlighting various gothic episodes of our recent past to illustrate

---

111 Sterling’s Web 2.0 and Wikileaks observations at Webstock in New Zealand in 2009 and 2010 are worth seeking out in this regard. Less so his more constrained video interviews with Techcrunch at SXSW in 2011.
his thesis I found that excavating similar digital objects over a longer period produced an even more persuasive catalogue of cultural and historical touch stones. It was evident the elements which constituted the dark euphoric moment had a lineage that ran deep into the previous century. As Fredric Jameson noted of the power of the “allegory”, I too found compelling evidence – objects with stories – that constituted a duality in the techno-cultural narrative. This, I would find, was not a subtle inflection or vague subtext but a big bright and at times gaudy narrative that had cut an all-encompassing path across western culture from the outset of the 20th Century.

In the radical expressions of the Italian Futurists to the big canvas constructions of science fiction cinema and super hero parables of the new millennia, there lay in between a litany of both glossy futurist objects and their dark gothic counterpoints. For every manifesto that trumpeted the glory of technological innovation – of steam ships, of trains and aeroplanes – there was a King Kong, a Hindenburg and a September 11; for every HTC device wrapped in sizzling liquid energy there was the sad, dark history of conflict minerals buzzing beneath the black mirror; for every Apollo mission, for every Shuttle triumph there was a fiery tragic fall back to Earth; for every assumption we make about the future there is the stark reality of the present state of things. This duality fosters the neo-gothic anxiety in both the mediascape of simulation – in marketing collateral, in military futurism and cinematic virtuality – and in the new aesthetic paradigm present in the medium of their delivery. Most certainly this is evident in the visual deconstructions of films, games, photography and media art but also in the placement of these works in the vision stream. Their re-occurrence, their repetition and their sampling all point to an active and conscious effort by the media to somehow raise the alarm, not just for what lies ahead but in an attempt to emphasise what has just passed us by. It is therefore perhaps not the network that warrants the ecological metaphor but the content the network carries – the images, the image sequences, and the archive – that is quite possibly the sentient life force of our technological dreaming.

What I have tried to achieve then with this text is an unpacking of the signification of various digital objects to expose their own network logic in the authoring of the neo-gothic narrative. To paraphrase Virilio, in this realm the works and events examined here exist both as a calculated demonstration of technology as saviour – as companion / as evolution / as future – but also as evidence of the fear and anxiety that the accident of that technology engenders. Going beyond this however, the end-game I suppose, is the melding of a fictitious future – a science fiction – with the language, programs and policies of governments and the agencies they fund in the promotion and execution of public safety, cyber security, surveillance, data mining, artificial intelligence and the theatre of war. Both in media art and media reportage the commercialisation of the future is distinctly evident while a concurrent mourning for its failings is equally prominent. How else does
one explain the narratives of the Matrix, of A.I. Artificial Intelligence, of Mad Men and of Gravity? What do we see when we look at The Scream hanging in the Museum of Modern Art in New York it’s hollow visage staring back at the crowds and the cameras and the security guards? Each of them mot certainly a product of their time but also authors of their own evolving narrative as time inevitably moves forward and the cultural logic of their relativity shifts and morphs around them.

Therefore coupled to my investigation into the fabric of the media itself is an effort to delve beyond the artefact as cultural object to the existence of that artefact on a dynamic shifting network. The digital object becomes a plot point within a broader narrative construct – a narrative that was well underway almost a 100 years before. While not an exhaustive historical study, the task here was undertaken to rationalise and expose the links between the techno-futurism of the present with the technologies and cultures of the past. By examining the symbolism and visual design of the work of Robert Delaunay and his Italian contemporaries I could demonstrate that the use of colour as a symbolic force and as a metaphor for technological innovation was being re-played in the contemporary motion graphics of consumer electronics advertising and communication services while also being explicitly rendered in the logos and icons of the “information revolution”. And while these artefacts displayed colourful and at times luminous characteristics – directing us toward the millennial transitional space of the Cyber City – it often masked a darker more pervasive narrative force. That the liquid electric aesthetic can be mapped from Spielberg and Tron back to the search for the origins of the universe is telling – not just for their cultural prominence – but for the oft repeated technique stretching back to Delaunay, Cara, Boccioni and Edison. To simulate but not to show, to point the way but to never reveal became a distinct trend in the techno-cultural and techno-futurist oeuvre. This was the template that was so breathtakingly constructed at the World’s Fair of 1939 by America’s corporate elite – a streamlined future society and an economy of endless growth that was both high-end and high-tech. This vision was ultimately an illusionary one and is indicative of the shallow prophecies that would follow. This sophisticated magic trick it would seem is now set on repeat – an endless image loop – that broadcasts out across all manner of mediums drawing us into the “new economy” of information and of personal device technology. For this reason, the promise of a Utopian networked society falls someway short of the glossy pronouncements of Microsoft, Apple and Google today. This is Jaron Lanier’s cursory gadget future: “the hive” that tempts us with design, and ergonomics, and speed and invisibility. The anonymity that it breeds comforts us with its likeness and its sameness and its homogenous shared identity. Is this the gothic high-tech embrace that is played out at the end of Sterling’s dark euphoric fall? Is this the falling man stretched out like the angel of history gasping for air, clamouring for Superman’s embrace? Is this the space in which we retreat when presented with the inverse of the techno-
futurist paradigm? Is the comfort of the hive our only recourse when the reality of the mega-scopic
disaster reel – the endless summer blockbuster - reveals the true expanse of the apocalypse? Is it
here that we ultimately look away – from the mega-carbon skies, from the zero carbon server farms
from the autonomous swarm of drones? In the absence of what it means to be human, in this
forgotten place, do we shoot like an asteroid passed the blue planet in another direction altogether?

I have attempted to answer these questions with the analysis that is represented in this text.
The iUser, as digital flâner, is confronted with a conflicting depiction of the imminent future as
either a corporate fantasy or a science fiction dystopia; technology as Utopian ideal or an object to
be feared and viewed with suspicion. Conversely we have also seen that when these fantasies are
realised they emerge as either highly commercialised products or services or more perversely as
very real and highly functional devices of war. It would seem that the extreme version of the
simulation is taking effect. That the very worst and the most advanced evolution of what the iUser
has witnessed in theory and in fiction is manifesting itself across a whole range of media.

I have illustrated that Sterling’s dark euphoric fall is far from a mere description of the
temperament of the times but perhaps a literal fall from a place heavy with history – and inversely
laden with a foreboding gothic anxiety of what may lie beyond. The lowering of the horizon line, the
reductive aesthetic of the POV shot and ultimately the twisted form induced by the velocity of the
fall itself has become the definitive image assemblage of the neo-gothic turn in millennial culture.
The transition is fast reaching an uncomfortable albeit inevitable permanence as a society that once
marvelled at the quest for the stars – of planes and of towers and of space dreaming – has now
surrendered to a sweeping technological futurity rendered in our name but not of our nature.

Thus a blending of Futurism, consumerism and nation building emerges as one of the most
powerful interdisciplinary bi-products of the millennial age. The alternative view – and an equally
powerful force – is represented in the fictions, the documents and the dreaming of artists and image
makers who have signalled that a darker turn has in fact taken hold. Here the work of McLean
Fahnestock, Edouard Salier, Trevor Paglen, Chris Cunningham and Alex Roman in particular
demonstrate a very real and very tangible anxiety by exposing the presence of a dark unsettling
texture beneath the glossy digital veneer of technoculture. As Kim Stanley-Robinson has observed,
our world is an inescapable Beta test for science and technological experimentation which inevitably
fosters a raft of anxieties - about technology and the network (see the films of the mid-1990s) the
environmental collapse and man-made apocalypse (the disaster cinema of the new millennia) and
now the critical appraisal of machine vision and drone culture by media artists and film makers in
the second decade of the 21st Century. All of this as the black mirror channels our vision away from
the stars, lowering our field of vision, tilting the camera down, focusing the lens of the machine upon
ourselves. The great subjugation of humanity might well be at hand, not by bloody battle or violent revolution but as a slow systematic decline in the boundaries of personal space and with it the loss of the freedom to move, to act and to go there unnoticed.

As Sterling sees it, and as I hope the evidence presented here may show, what we are duly experiencing is an endless journey back to a non-Earth space. The Earth as pixel perfect icon, the Earth as simulation. What remains of the blue planet, barely born but nearly always new again is an origin parable not of soil, or of bone, or of blood, but of pixels. There is an endlessness that is present in this place. In the yearnings of Don Draper, in the anxiety of Dr Stone and in the loneliness of Wall-E we recognise the link with Žižek’s desert of the real. This accumulation of evocative digital objects exposes an uncomfortable vision – not of perfect impossible angles, of moulded plastics, of curved glass and of liquid metal but of a scorched Earth bristling with a complex, unknowable, unquantifiable liquid electric Internet of things. And no matter how pronounced the simulacra, no matter how obvious the echo of horrors past what remains elusive, what struggles to be understood is the texture of what lies beneath.
Figure 292 Tesla Tower (Shainblum, 2014)
List of Illustrations

**Figure 1** Bruce Sterling, “On favela chic, gothic high-tech” at Reboot 11, Copenhagen (Sterling, 2009) .................. xii
**Figure 2** National Geographic, September 2013 issue, “Rising Seas” cover (National Geographic Society, 2013) .......... xiv
**Figure 3** “The Eiffel Tower as a Gigantic Lightning Conductor” (Loppé, 1902) ................................................................. i
**Figure 4** Return to Earth scenarios in early 21st Century cinema: Star Trek Into Darkness (Abrams, 2013), Oblivion (Kosinski, 2013), Elysium (Blomkamp, 2013), After Earth (Shyamalan, 2013), Oblivion (Kosinski, 2013), The Man of Steel (Snyder, 2013), WALL-E (Stanton, 2008), Avatar (Cameron, 2009) and Gravity (Cuarón, 2013) 6

**Figure 5** Cover image for the article, “The Presidency: Turning Vision Into Reality” (Sides, 1983) ........................................ 9
**Figure 6** Rambo: First Blood Part II (Cosmatos, 1985) ............................................................................................................ 9
**Figure 7** Top Gun (T. Scott, 1986) ........................................................................................................................................... 9
**Figure 8** Computer code graphic used on the CSER home page banner (Price, Hawking, Rees, & Tallin, 2013) .......... 12
**Figure 9** Comet Temple1 Alive 67 seconds after impact with NASA’s “impactor” spacecraft. (NASA/JPL-Caltech/UMD, 2005) .................................................................................................................................................. 13

**Figure 10** Michael Jackson (Ditz, 1971) .............................................................................................................................. 13
**Figure 11** Eiffel Tower illuminated at Paris Exposition (Rau, 1900) ..................................................................................... 13
**Figure 12** Richard Long’s A Line Made by Walking (Long, 1967) ......................................................................................... 20
**Figure 13** Cattle Station Brand, Newcastle Waters (1861) ........................................................................................................ 22
**Figure 14** Eastman Kodak (1907) ............................................................................................................................................. 22
**Figure 15** Tool Undertow barcode, Zoo Ent. (1993) ................................................................................................................... 22
**Figure 16** Adidas QR Code .................................................................................................................................................... 22
**Figure 17** IBM QR Code ..................................................................................................................................................... 22
**Figure 18** Earthrise, NASA (Anders, 1968). .......................................................................................................................... 24
**Figure 19** Adidas, Celebrate Originality campaign (180LA, 2008). ....................................................................................... 24
**Figure 20** Whole Earth Badge (Brand, 1966) ........................................................................................................................ 25
**Figure 21** David Bowie, Space Oddity (Bowie, 1969) ................................................................................................................ 25
**Figure 22** The Whole Earth Catalog (Brand, 1968) .................................................................................................................. 25
**Figure 23** Milton Glaser’s I Love New York logo (Glaser, 1977) ............................................................................................. 25
**Figure 24** Windows Network Connection ............................................................................................................................. 26
**Figure 25** Google Earth ...................................................................................................................................................... 26
**Figure 26** HTC Internet Browser Launch Screen .................................................................................................................... 26
**Figure 27** Anonymous Logo .................................................................................................................................................... 26
**Figure 28** Evan Roth’s Internet Cache Self Portrait, July 17, 2012 (Roth, 2012), Lambda print face mounted on acrylic, dibond backing, 187cmx125cm ............................................................... 28
**Figure 29** Scream 2.0 (Goodwin, 2011) ..................................................................................................................................... 29
**Figure 30** Panel #3 from the Dark Euphoria series (Goodwin, 2011b) ...................................................................................... 34
**Figure 31** Sun, Tower, Airplane (Delaunay, 1911b) ................................................................................................................... 36
**Figure 32** Rhythm of the Violinist (Balla, 1912) ........................................................................................................................ 38
**Figure 33** Music (Russolo, 1911) ............................................................................................................................................. 39

307
**Figure 34** Dub Step DJ Datsik performing in the “Vortex” a projection mapping installation (V Squared Labs, 2012) ................................................... 39

**Figure 35** Still frames from *Come To Daddy* (Cunningham, 1997) Notice the static effects and manipulated video lines - the deliberate digital disruption of the analogue signal – which has become such a strong theme in Cunningham’s work. ................................................................. 40

**Figure 36** Still frames from *Come To Daddy* (Cunningham, 1997) ............................................................................................................................. 41

**Figure 37** David Hall, *TV Interruptions* (Hall, 1971) ................................................................................................................................. 42

**Figure 38** Nam June Paik and Jud Yalkut. *Beatles Electroniques* (Paik & Yalkut, 1966) ................................................................. 42

**Figure 39** Example of datamoshing, screenshots from *Welcome to Heartbreak* by Kanye West (Elderkin, 2009) ....... 44

**Figure 40** Screenshots from *Glitchalysm* (Goodwin, 2011c) 1080P video assemblage version. Sampled images from the documentary, *Catastrophe: Asteroid Strike* (S. Bennett & Bennett, 2008), *Swordfish* (Sen, 2001) and *Planet of the Apes* (Schaffner, 1968) ................................................................................................................................. 44

**Figure 41** ISAM by Amon Tobin, Heather Shaw and Vello Virkhaus at the Camp Bisco XI Festival (Ninja Tunes 2011) ............................................. 47

**Figure 42** Court of Honor at the Columbian Exposition in Chicago (Bartlett, 1893) ................................................................. 49

**Figure 43** Paris Exposition (1900) ................................................................................................................................. 49

**Figure 44** *Luna Park In Paris* (Balla, 1900) ................................................................................................................................. 49

**Figure 45** *Nocturne in Piazza Becarria* (Carra, 1910) ................................................................................................................... 50

**Figure 46** *Forces of the Street* (Boccon, 1911a) ................................................................................................................... 50

**Figure 47** Advertisement for Thomas Edison’s Vitasecope (Metropolitan Print Company, 1896) ................................................................. 51

**Figure 48** Electric Tower, Day. Pan-American Exposition, Buffalo, NY, Thomas Edison, Inc. (Porter & White, 1901). ................................................................. 52

**Figure 49** Electric Tower, Night. Pan-American Exposition, Buffalo, NY, Thomas Edison, Inc. ................................................................. 52

**Figure 50** Carra (1910) *Leaving the Theatre* (CARRÁ, 1910) ................................................................................................................................. 53

**Figure 51** States of Mind - Those Who Go (Boccon, 1911c) ................................................................................................................................. 54

**Figure 52** States of Mind - The Farewells ................................................................................................................................. 54

**Figure 53** States of Mind - Those Who Stay ................................................................................................................................. 54

**Figure 54** Promotional photograph by Murray Korman for Salvador Dali’s *Dream of Venus* pavilion at the 1939 World’s Fair in New York (Korman & Dalí, 1939) ................................................................. 58

**Figure 55** Delaunay (1912-13) *Circular Forms, Sun No. 2* ................................................................................................................................. 59

**Figure 56** Simultaneous Visions (Boccon, 1911d). **Top Right** Panel detail depicts what appears to be a tank rolling through the street below. **Bottom Right** Panel detail appears to depict army personnel marching in formation ................................................................................................................................. 61

**Figure 57** Simultaneous Windows on the City (Delaunay, 1912b) ................................................................................................................................. 62

**Figure 58** Collection of details from Italian and Russian Futurist works grouped thematically in rows by visual references. **First Row L-R: Electricity and Artificial Light** [Boccon, 1911] *The Forces of the Street*, Giacomo Balla (1909) *Street Light*, Natalia Goncharova (1913) *The Electric Light*. **Second Row L-R: Flight & Verticality** [Delaunay’s Homage To Blériot (1914), Tour Eiffel (1911) Sun, Tower, Airplane (1913)]. **Third Row L-R: War and Weapons** [Severini’s Armoured Train in Action (1913), Plastic Synthesis of the Idea of War (1915) Gun In Action (1915)]. **Fourth Row L-R: Speed and Transportation** [Russolo (1912) Dynamics Of A Car, Del Marie (1913) The Port, Boccon (1911) States of Mind I – Farewells] ................................................................................................................................. 63

**Figure 59** Evolution of the Microsoft Windows branding from the original Windows 3.0 logo (1990); Windows XP logo (2001); to the Windows 7 Start-up logo (2009) ................................................................................................................................. 66

**Figure 60** Evolution of the Google visual iconography, from the original logo (1999); the bevelled 3D Google Chrome logo (2008); flattened 2D Google Chrome logo (2011) ................................................................................................................................. 66

**Figure 61** Microsoft commercial for the launch of Windows XP (Microsoft Corp, 2001) ................................................................................................................................. 68

**Figure 62** Google Chrome advertisement, Japan (Google, 2009) ................................................................................................................................. 69

**Figure 63** Chrome Speed Test (Google, 2010) ................................................................................................................................. 69
Figure 64 Frames from the Google Chrome Speed Test commercial video in which the speed of a lightning bolt conducted from a Tesla coil to a grounded model sailing ship is measured against the loading of a webpage in the Google Chrome browser. ......................................................... 70

Figure 65 Still frames from Honda Cog commercial (Bardou-Jacquet, 2003) ................................................................. 71

Figure 66 Der Mensch der Industriepalast (Man as an Industrial Palace) (Kahn, 1926) ......................................................... 73

Figure 67 SONY PS2 “Head” print advertisement (TBWA, 2006) .................................................................................... 73


Figure 69 Still frames from Leave It to Roll-Oh featuring the ghostly “tiny robots” (Jam Handy, 1939) ......................... 80

Figure 70 A sequential series of screenshots from each of the 4 channels from the installation Primary Propaganda (Goodwin, 2011e) ................................................................. 83

Figure 71 Screenshots from SONY Bravia ‘Play Doh Rabbit’ commercial (Fallon, 2007) ...................................................... 84

Figure 72 Screenshots from SONY Bravia ‘Bouncy Balls’ commercial (Fallon, 2005) ...................................................... 84

Figure 73 Multi-screen assemblage of New York Is Killing Me (Chris Cunningham Remix) (Cunningham, 2010) ...... 86

Figure 74 The plastic bag sequence from American Beauty (Mendes, 2000) ................................................................. 86

Figure 75 Two frames from the informational video Google Chrome Privacy - Browsers, Privacy and You (Google Inc, 2010) ............................................................................................ 88

Figure 76 Screenshot of Google 404 Error page, captured on the 12th March 2014 (Google Inc., 2014) ............. 88

Figure 77 Artist Wang Yuyang poses with his installation Artificial Moon (Yuyang, 2011) ........................................ 89

Figure 78 Details from DHL’s corporate video, Global Connectedness Index 2012 (Ogilvy One, 2012) ................. 92

Figure 79 Primary colours and paint montage (From Top) Sky+ HD Supertelly commercial (WCRS, 2010); SONY Bravia ‘Paint’ commercial (Fallon, 2006); Introducing Samsung Galaxy S4 web only commercial (Cheil, 2013a); Samsung LEDTV Series 7 ‘New Species’ commercial (1st Ave Machine, 2009) ....................... 93

Figure 80 SONY Bravia ‘Paint’ commercial (Fallon, 2006) ................................................................................................. 94

Figure 81 Still from The Shining (Kubrick, 1980) .................................................................................................................. 94

Figure 82 Exhibition documentation of Primary Propaganda (Goodwin, 2011e) .......................................................... 94

Figure 83 HTC Titan commercial (Mother, 2011c) ................................................................................................................. 95

Figure 84 HTC Radar commercial (Mother, 2011a) ............................................................................................................... 95

Figure 85 Advertising featuring liquid and kinetic electricity A–C) DHL “The International Specialists” TV Commercial, (180 Amsterdam, 2011) D) DHL The World in 2050 corporate video (Deutsche Post DHL, 2012) E) IBM Commercial, Data Anthem F) & G) IBM Commercial, Data Energy; H) IBM Commercial, Data Baby (Ogilvy & Mather, 2010) ............................................................................................................. 97

Figure 86 Comcast High Speed Data with PowerBoost commercial, “Hair” (Gooby Silverstein and Partners, 2007a) ................................................................. 99

Figure 87 The personal touch of the liquid electric (From Top Left): IBM commercial, Data Baby (Ogilvy & Mather, 2010); DHL “The International Specialists” TV Commercial, (180 Amsterdam, 2011); “Samsung Galaxy S4 Life Companion” website home page image (Cheil, 2013b); “Unleash Your Fingers: Next Generation” web video for Samsung France (Heaven, 2012) ............................................................................................................. 101

Figure 88 The electric blue aesthetic in cinema (From Top Left) A–C) The All-New Mazda6 Infograpic web only promotional video for Mazda Australia (Garage Team Mazda, 2012); D) Star Trek: Into the Darkness/Mazda Corp. product tie-in (Abrams, 2013); E) Star Trek: The Motion Picture (Wise, 1979); F) Tron (Lisberger, 1982); G) Star Wars: Episode VI – Return of the Jedi (Marquand, 1983); H) The Matrix (Wachowski & Wachowski, 1999) ........................................................................................................................................... 103

Figure 89 LG commercial “Advanced Technology Beautifully Hidden” (Bartle Bogle Hegarty, 2008) ................. 104

Figure 90 Tron (Lisberger, 1982) ........................................................................................................................................ 107
There is considerable effort put into not only the production qualities of these films, which are rich in production design and **Figure 111** The HUD view for the Data Glasses in *Mixed Reality – Nokia World* corporate video (Nokia, 2009).
Figure 117 Panorama image take by the Mars rover Curiosity Rover, The Empty Quarter – Meridiani Plains. Opportunity took this image while stuck in the sand ripple dubbed Purgatory for over a month. (NASA, JPL-Caltech, & Cornell University, 2009) ................................................................. 133

Figure 118 The commodification of space. (From Top Left): A) Model Kate Upton aboard Zero X for a Sports Illustrated photo shoot; B) The Mars Curiosity Rover takes a selfie and posts the image to Twitter (NASA & JPL, 2012); C) Felix Baumgartner, sporting Red Bull and Zenith logos, prepares to make the 38.6 kilometre free-fall from the edge of space (Humphries, 2012); D) Photographer Michael Najjar’s image of the Virgin Galactic spacecraft from his Outer Space series; E) “The Claw” stage design from the U2360 tour F) Astronaut Chris Hadfield sings David Bowie’s Space Oddity in a live stream from the International Space Station; G) Concept art of the DSI-Harvestor by Deep Space Industries (Deep Space Industries Inc., 2013) .................................................. 135

Figure 119 Using footage from the “Curiosity Rover” film NASA manufactured its own dark euphoric moment: Curiosity’s Seven Minutes of Terror (NASA, 2012) ........................................................................................................ 138

Figure 120 Screenshot from the Daily Mail Online article, “Asteroid that could do as much damage as 1,000 atomic bombs will whizz past today (and could knock out your TV signal)” (Macrae, 2013). ........................................ 142

Figure 121 Asteroid 2012 DA14 Flight Path (NASA, 2013c) ........................................................................ 141

Figure 122 Miracle Planet: Violent Past (Carrère, Longul, & Tasuke, 2005) ..................................................... 141

Figure 123 Melancholia (Von Trier, 2011) ........................................................................................................ 141

Figure 124 Comparison with an American football pitch, Asteroid 2012 DA14 to Safely Pass Earth (NASA, 2013d) ........................................................................................................................................ 142

Figure 125 Citing of the 1908 Tunguska blast, Asteroid 2012 DA14 to Safely Pass Earth (NASA, 2013e) .... 142

Figure 126 Still from mobile video, 15/02/13, Chelyabinsk Russia (TuVix72 & RT News, 2013) ................. 142

Figure 127 Still from car dashboard camera, 15/02/13, Chelyabinsk Russia (TuVix72 & RT News, 2013) .... 142

Figure 128 Still from mobile video, 15/02/13, Chelyabinsk Russia (TuVix72 & RT News, 2013) ................. 142

Figure 129 This image from an in-car dashboard camera captures the Chelyabinsk meteor exploding was taken from the video “Chelyabinsk Footage Collection” by YouTube user TuVix 72 (RT News, 2013b). ................................. 143

Figure 130 Russia Today News broadcast of Chelyabinsk incident (RT News, 2013c) ........................................ 144

Figure 131 Children fleeing explosion (Hmelinskiy, 2013) ........................................................................ 144

Figure 132 Radial blast from meteor blows in office windows and doors (Davlekovtov, 2013) ...................... 144

Figure 133 The deafening sound of the Chelyabinsk meteor exploding in the atmosphere (Chentsov, 2013) 144

Figure 134 Image sequence from the NASA video Animation Asteroid Redirect Mission (NASA, 2013a) .............. 147

Figure 135 The homogenisation of space flight imagery (Clockwise from top left): The U.S. Air Force launches 3rd X-37B Orbital Test Vehicle in 2012; the launch of the Raytheon Company’s Exo-atmospheric Kill Vehicle (EKV) in 2011; the 2008 launch of a Delta II Rocket carrying the GeoEye-1 satellite; the Missile Defence Agency launch of the Space Tracking and Surveillance System in 2008; the Missile Defence Agency launch of the FTG-05 Ground-based Midcourse Defense Interceptor (EKV) in 2008 ........................................................................................................ 148

Figure 136 (From left to right) Rocketless Launch Series by media artist McLean Fahnestock. “An important part of my work is the reclamation of information from the media and history from institutions and re-presenting it in a way that leads us to address the truth of a situation versus the myth that has been perpetuated.” (Fahnestock, 2010-2012) ........................................................................................................ 148

Figure 137 Near earth orbit cargo payloads: Google and US Defence Department partnership GeoEye-1 satellite payload (Google, 2008); Missile Defence Agency’s Ground-based Midcourse Defence Kill Vehicle (Missile Defense Agency, 2011); US Air Force AEHF-2 spy satellite (Department of Defense, 2012) ................................................................. 149

Figure 138 Enhanced Exo-atmospheric Kill Vehicle (EKV) concept art (Raytheon Company, 2013a) and a tweet reposted on the Fox News “Military Tech” website from the EKV developer Raytheon Company about a successful test intercept that occurred on January 26 2013 (Raytheon Company & Fox News, 2013). Spending by the Missile Defense Agency is tipped to rise by US$4 billion over the five years from 2015–2019 (Shalal-Esa, 2014) and (Missile Defense Agency, 2014) ........................................................................................................ 149

Figure 139 Fahnestock’s source image: an Air Force Minotaur I rocket launches into orbit carrying the Air Force Research Laboratory’s TacSat-3 satellite (Orbital Sciences, 2009). NASA launch video can be found here. 150
Figure 140 National Reconnaissance Office commemorative patch (Paglen, 2006) .................................................. 151
Figure 141 The 509th Bombardment Group - B-2 Spirit stealth bomber flight test commemorative patch (Paglen, 2006) ........................................................................................................................................... 151
Figure 142 Unknown origin, the “Behind The Green Door” commemorative patch (Paglen, 2006) ............................... 151
Figure 143 NROL-38 United Launch Alliance Atlas V rocket with the launch vehicle depicting the mission logo and the insignia: “Non Moriris Bello - You will not die by war.” (Foley, 2012) .......................................................... 152
Figure 144 United Launch Alliance Delta IV rocket carrying the Wideband Global SATCOM (WGS-5) satellite. This is the 5th and final satellite to be sent into orbit, hence the insignia: “The Full House”. According to ULA, “WGS provides anytime, anywhere communication for the warfighter through broadcast, multicast, and point to point connections.” (United Launch Alliance, 2013) .................................................................... 152
Figure 145 U.S. Airforce illustration for original Star Wars proposal (Strategic Defence Initiative) which included scope for a “ground/space hybrid laser weapon system” (U.S. Airforce, 1984) ........................................................................................................... 153
Figure 146 Artist’s depiction of a hypothetical Wormhole Induction Propelled Spacecraft, based loosely on the 1994 "warp drive" paper of Miguel Alcubierre, with a little help from Star Trek (Bossinas & NASA, 2008). 153
Figure 147 Three image composite of the November 2012 total solar eclipse, Cairns Australia (ESA/ NASA, 2012) ........................................................................................................................................ 153
Figure 148 Spietz’s Orion, a composite of three infrared and three optical images of the Orion Nebulae as photographed on September 17 2011 by the Spitzer and Hubble telescopes. (NASA, JPL, Caltech, & Megeath, 2011) ........................................................................................................................................ 154
Figure 149 “Black Hole” illustration by Aurore Simonnet released by NASA (Simonnet, NASA, & Sonoma State University, 2007a) ....................................................................................................................................... 154
Figure 150 “Planet-Mass Object Orbiting Neutron Star” illustration by Aurore Simonnet released by NASA (Simonnet, NASA, & Sonoma State University, 2007a) .............................................................................................................. 154
Figure 151 A simulated black hole created by the Large Hadron Collider (CERN, 2013c) ........................................ 156
Figure 152 The ATLAS detector of the Large Hadron Collider. For a guide to scale the detector, note the technician at the base of the image. (CERN, 2012a) ...................................................................................................................................... 156
Figure 153 The simulated data model for the Higgs-Boson from the CMS detector on the Large Hadron Collider (LHC) at CERN. “The lines represent the possible paths of particles produced by the proton-proton collision in the detector while the energy these particles deposit is shown in blue.” (CERN & Taylor, 1997) ........................................................................................................ 157
Figure 154 Event display of candidate Higgs boson decaying to four electrons recorded by ATLAS on 18 May 2012. This image was developed from the data gathered from that event and first published on Jul 4 2012 during the announcement that confirmed its existence. (CERN, 2012b) ................................................................................................................................ 157
Figure 155 Dark Euphoria #06 (Goodwin, 2011b) .............................................................................................................. 158
Figure 156 Dark Euphoria #02 (Goodwin, 2011b) .............................................................................................................. 159
Figure 157 Dark Euphoria #03 (Goodwin, 2011b) .............................................................................................................. 159
Figure 158 Robert Henke’s Fragile Territories (Henke, 2012a) ......................................................................................... 161
Figure 159 Jean-Pierre Aubé’s Electrosmog Montreal (Aubé, 2013) .................................................................................. 161
Figure 160 Oninformative’s Fragments of RGB (Laub & Kiefer, 2010b) ........................................................................ 162
Figure 161 Screenshots from Brok’r’s Biophilia iPad app (Bjork, Snibbe, & M/M Paris, 2011) ................................. 163
Figure 162 A composite image made from several infrared snapshots of northern Baltic Sea by NASA’s Landsat 7 on April 19, 2003. “Ethereal swirls of grease ice appear turquoise against the midnight blue of the northern Baltic Sea near the Aland Islands (red) between Finland and Sweden. An early stage of sea-ice formation, grease ice consists of a viscous mix of tiny ice crystals and resembles an oil slick on the ocean’s surface. Wind and currents constantly shape and reshape grease ice into surreal, ghostly patterns.” (Mason & NASA, 2010) ........................................................................................................................................ 166
Figure 163 An example of the bokeh blur effect (H-D-Stock, 2008) ............................................................................... 168
Figure 164 The Bathroom by Pilpop (Pilpop, 2011) ............................................................................................................. 168
Figure 165 Xavier Chassaing’s Scintillation (Chassaing, 2009) ...................................................................................... 168
Figure 166 Xavier Chassaing’s Scintillation (Chassaing, 2009) ...................................................................................... 168
FIGURE 167 Still frames from Alex Roman’s ode to early modernism, The Third & The Seventh (Roman, 2009) ........................................... 170
FIGURE 168 Still frames from Mathieu Gerard’s Steel Life (Gerard, 2009) .......................................................................................... 171
FIGURE 169 Still frames from the trailer to the game Wolfenstein: The New Order (Machine Games & Bethesda, 2013) .................... 172
FIGURE 170 Still frames from promo clips, Sea, Land and Air for Battlefield 4 (Electronic Arts & Dice, 2013).............................. 174
FIGURE 171 Still frames from Kaos Studio’s promotional video, The World of Homefront (Kaos Studios & THQ, Inc, 2010) ................. 176
FIGURE 172 Xbox 360 packaging for Homefront (Kaos Studios, 2011) .......................................................................................... 178
FIGURE 173 Command & Conquer: Generals (EA Pacific, 2003). See original game trailer here................................. 180
FIGURE 175 Inmates at Guantanamo Bay, Cuba (McCoy, AFP, & Getty Images, 2010) ................................................................. 183
FIGURE 176 Guantanamo Bay, Cuba (Shephard & Press, 2013) ................................................................................................. 184
FIGURE 177 Still frames from the North Korean propaganda film from February 2013 (Uriminzokkiri, 2013) ........................ 186
FIGURE 178 The installation featured a small box housing a conventional 34cm TV monitor and covered in synthetic fur, each side a different primary colour. Sitting in front of the monitor was a collection of plush toys, some with their eyes gouged, others with buttons hanging by single threads - each of them staring blankly into the electric blue glow of the cathode ray tube. Scattered amidst them were smaller primary coloured fur cubes and an Australian Defence Force issued carry case for cartridges for small artillery ........................................ 188
FIGURE 179 Still frames from Vonnegut’s Fire Fight Fuzz Box (Goodwin, 2011) ................................................................. 189
FIGURE 180 Christian Marclay’s The Clock (Marclay, 2010) ................................................................................................. 191
FIGURE 181 Richard Dreyfuss in Steven Spielbergs Close Encounters of the Third Kind (Spielberg, 1977) from “The Spielberg Face” (Lee, 2011) ........................................... 193
FIGURE 182 Combined still frame from Jeff Desom’s Rear Window Loop (Desom, 2010) ......................................................... 195
FIGURE 183 A.I Artificial Intelligence (Spielberg, 2001) .................................................... 196
FIGURE 184 Deep Impact (Leder, 1998) ....................................................................................................................... 197
FIGURE 185 The Day After Tomorrow (Roland Emmerich, 2004) .......................................................................................... 198
FIGURE 186 Cloverfield (Abrams, 2008) ................................................................................................. 199
FIGURE 187 Wolfenstein: New Order (Machine Games & Bethesda, 2013) .............................................................. 201
FIGURE 188 Still frame from video channel one of My Endless Dystopian Summer Blockbuster (Goodwin, 2011) 202
FIGURE 189 My Endless Dystopian Summer Blockbuster (Goodwin, 2011) .............................................................. 203
FIGURE 190 Panel #1 from the Dark Euphoria series (Goodwin, 2011) ................................................................. 204
FIGURE 191 Promotional image from the series Black Mirror (Brooker, 2011) .............................................................. 205
FIGURE 192 HTC Sensation (Mother, 2011) .................................................................................................................. 206
FIGURE 193 PS3 “Fade To Black” (TBWA\Chiat\Day, 2007a) .......................................................................................... 207
FIGURE 194 Sony PlayStation TV Spot (TBWA\Chiat\Day, 2007c) ....................................................................................... 208
FIGURE 195 PS3 Mushroom Clowns print advert (TBWA, 2008) .......................................................................................... 209
FIGURE 196 Michael Cramer’s photographic essay on conflict minerals, Supply Chain (Craemer, 2011). The full series can be found on his website ........................................... 210
FIGURE 197 Conflict minerals (from left to right) Wolframite, Cassiterite and Coltan ......................................................... 211
FIGURE 198 Workers assemble electronic components at Foxconn’s factory in Shenzhen, China (Getty Images, 2012) ......................................................... 212
FIGURE 199 Guiyu, China’s Electronic Waste Village (Chung, 2009) ....................................................................................... 213
FIGURE 200 Discarded computer monitors and televisions are used to construct a makeshift path across the murky wetlands in Agbobloshie, Ghana ......................................................... 214
FIGURE 201 A worker lights a fire using foam insulation from a refrigerator in Agbobloshie, Ghana (McElvaney, 2014) ......................................................... 215
FIGURE 202 Anakin Skywalker becomes Darth Vader in George Lucas’ final prequel, Star Wars Episode III: Revenge of the Sith (Lucas, 2005) ......................................................... 216

313
Figure 203: Darvasa Crater, Turkmenistan (Hannes, Hoogte, & Redux, 2012). Figure 204: Guatemala sink hole (Raquec, 2010). Figure 205: A hole in the ice of Lake Chebarkul from the main mass of the Chelyabinsk meteor (Kalinin, 2013). .......................................................... 209

Figure 206: CCTV footage of Tomohiro Kato, Tokyo Japan (Reuters, 2008). .......................................................... 210

Figure 207: Tomohiro Kato being arrested on live television (Kyodo News, 2008). .......................................................... 210

Figure 208: Ray Gun magazine, first issue released November 1992 (Carson & Jarrett, 1992). .......................................................... 212

Figure 209: Achtung Baby, released November 18 1991 (U2, 1991). .......................................................... 212

Figure 210: The Net (Winkler, 1995). .......................................................... 214

Figure 211: Hackers (Softley, 1995). .......................................................... 214

Figure 212: Johnny Mnemonic (Longo, 1995). .......................................................... 214

Figure 213: Interviews with John Brockman, Stuart Brand and Heinz Von Foerster from The Net: LSD, The Unabomber & The Internet (Dammbach, 2003). .......................................................... 215

Figure 214: Assemblage of Alfonso Cuaron’s Gravity and Michael Najar’s Space Port (Goodwin, 2014). .......................................................... 219

Figure 215: Robert Delaunay’s Champs de Mars – The Red Tower (Delaunay, 1911a) from his Eiffel Tower series. .......................................................... 221

Figure 216: Robert Delaunay’s Simultaneous Windows (Delaunay, 1912a) from his Eiffel Tower series. .......................................................... 221

Figure 217: Robert Delaunay’s Homage to Blériot (Delaunay, 1914). .......................................................... 222

Figure 218: Still frames from the climactic scene of the RKO Pictures film, King Kong (Cooper & Schoedsack, 1933). .......................................................... 224

Figure 219: The Hindenburg floats over Manhattan on August 8, 1936, en route to Lakehurst, New Jersey (Associated Press, 1936). .......................................................... 224

Figure 220: Tulu Cali’s Nose Dive into the City (Cali, 1939). .......................................................... 225

Figure 221: Domenico Belli’s Pausing in Space (Belli, 1935). .......................................................... 227

Figure 222: The real and simulated emotions of the technological accident (1st Column) VIP guests watch the Challenger shuttle launch, Christa McAuliffe’s parents 2nd from top (CNN, 1986) (2nd Column) Onlookers watch the events unfold on September 11, 2001, image credits from top (AP Photo & Mor, 2001) (Witty & Time Inc, 2001) (Franco & Times, 2001) (Platt & Getty Images, 2001) (3rd Column) Still frames from the video assemblage, My Endless Dystopian Summer Blockbuster (Goodwin, 2011d) .......................................................... 229

Figure 223: Ground Zero by Doug Kanter and promotional footage for Crysis 3 (Reuters, 2001) and (Electronic Arts, 2013). Figure 224: Lois and Perry flee the falling office block in Man of Steel and WTC Dust cloud (Snyder, 2013) and (Associated Press, 2001). Figure 225: The Dark Knight Rises and the façade of the World Trade Centre on 9/11 (Nolan, 2012) and (AFP & Getty Images, 2001). .......................................................... 232

Figure 226: Promotional collateral for series six of Mad Men and Richard Drew’s image of The Falling Man on 9/11 (Weiner, 2007) and (Drew & Associated Press, 2001). .......................................................... 232

Figure 227: Inception (Nolan, 2010). .......................................................... 233

Figure 228: Edouard Salier’s animated film Flesh (Salier, 2005). .......................................................... 236

Figure 229: Edouard Salier’s animated film Flesh (Salier, 2005). .......................................................... 237

Figure 230: Hiromi Sawa’s short film Dwelling (Sawa, 2002). .......................................................... 238

Figure 231: Fabio Giampietro’s Metamorphosis series (Giampietro, 2010-2013A). .......................................................... 239

Figure 232: Fabio Giampietro’s Vertigo series (Giampietro, 2010-2013b). .......................................................... 239

Figure 233: Robert Delaunay’s Tour Eiffel and Gardens of the Champ–de–Mars (Delaunay, 1920) and Tom Cruise scales the Burj Khalifa in Mission: Impossible – Ghost Protocol (Bird, 2011). .......................................................... 240

Figure 234: The Hindenburg explodes, Lakehurst New Jersey, May 6 1937 (Associated Press, 1937). .......................................................... 241

Figure 235: The darkening aesthetic of filmic/comic book super hero iconography (DC Comics, 1939-2014) and (DC Comics, 1938-2014). .......................................................... 243

Figure 236: I Am Legend (Lawrence, 2007). .......................................................... 244

Figure 237: The Falling Man by photographer Richard Drew (Drew & Associated Press, 2001). .......................................................... 245

Figure 238: The Earth as cinematic backdrop in Gravity (Cuarón, 2013). .......................................................... 249

Figure 239: Still frames from Gravity (Cuarón, 2013). .......................................................... 250
Figure 240 The original photograph of Evelyn McHale by Robert Wiles (Wiles, 1947) which Andy Warhol appropriated for his work, Suicide (Fallen Body). .............................................................................................................................. 251
Figure 241 Andy Warhol's Suicide (Silver Jumping Man) (Warhol, 1963). .............................................................................................................................. 251
Figure 242 A.I. Artificial Intelligence (Spielberg, 2001a). See video link on Page 111 ............................................................................................................. 252
Figure 243 Detail from the poster for Vertigo (Hitchcock, 1958). .............................................................................................................................. 252
Figure 244 Still from the opening title sequence for the TV series Mad Men (Weiner, 2007). ..................................................................................... 252
Figure 246 James Webb Space Telescope (NASA, 2012) .............................................................................................................................. 257
Figure 247 Frank Gleason (top) tells Ted Chaough (bottom) that he has pancreatic cancer in the television series Mad Men. .............................................................................................................................. 259
Figure 248 Promotional illustration for the Chevy Vega.............................................................................................................................. 259
Figure 249 (Column 01): Promotional images from the film Alien (Ridley Scott, 1979) (Column 02): Evolution of U.S. Airforce military aircraft, the Curtis P-40 Warhawk (Parrothead Jeff, 2009), the RQ-4 Global Hawk (U.S. Airforce, 2012), and again an RQ-4 being unloaded from a C-5 Galaxy cargo carrier (Gathua & Rodgers, 2011). (Column 03): Images of Dell's Alienware range of gaming computers (Corporation, 2012). ....................................................................................................................................................... 261
Figure 250 Machine vision genealogy (top row from left to right): The IT-O Interrogator droid from Star Wars Episode IV: A New Hope (Lucas, 1977); Raytheon Company’s MTS-B Multispectral Targeting System (Raytheon Company, 2012) and the Logitech C600 webcam (Logitech, 2010). (Bottom row from left to right): Probe droid from Star Wars Episode V: The Empire Strikes Back (Kershner, 1980), Lockheed Martin’s Longbow Fire Control Radar (FCR) system (Lockheed Martin & Northrop Grumman, 2013) and the Microsoft Xbox 360 Kinect system (Microsoft, 2013). ....................................................................................................................................................... 262
Figure 251 The augmentation of machine vision:....................................................................................................................................................... 263
Figure 252 US Air Force "Science Drives Everything We Do" STEM website interface samples (U.S. Air Force, 2013). ....................................................................................................................................................... 265
Figure 253 Samples of the navigation tiles from the Northrop Grumman website home page (Northrop Grumman, 2013b). ....................................................................................................................................................... 266
Figure 254 “Science Bob” from the Northrop Grumman Corporate Responsibility STEMFlix website (Northrop Grumman Foundation, 2013). ....................................................................................................................................................... 266
Figure 255 Screenshots from Designing the Future promotional video (Northrop Grumman, 2007). ....................................................................................................................................................... 268
Figure 256 The Matrix Revolutions (The Wachowski Bros, 2003) ....................................................................................................................................................... 269
Figure 257 I, Robot (Proyas, 2004). ....................................................................................................................................................... 269
Figure 258 Sky Captain & the World of Tomorrow (Conran, 2004). ....................................................................................................................................................... 269
Figure 259 Star Wars Episode II: Attack of the Clones (Lucas, 2002) ....................................................................................................................................................... 269
Figure 260 Terminator III: Rise of the Machines (Mostow, 2003). ....................................................................................................................................................... 269
Figure 261 The cover of Daniel Wilson’s 2011 novel Robopocalypse (Wilson, 2011) and a still from Ridley Scott’s 1982 film Blade Runner (Ridley Scott, 1982). ....................................................................................................................................................... 270
Figure 262 ATLAS (Agile Anthropomorphic) humanoid robot (Boston Dynamics, 2013a). ....................................................................................................................................................... 272
Figure 263 The Valkyrie (Val) robonaut (NASA, 2013g). ....................................................................................................................................................... 272
Figure 264 RoboCop (Verhoeven, 1987). ....................................................................................................................................................... 272
Figure 265 Iron Man ( Favreau, 2008). ....................................................................................................................................................... 272
Figure 266 The HULC (Human Universal Load Carrier) system (Lockheed Martin, 2013). ....................................................................................................................................................... 273
Figure 267 Concept art for Elysium by Aaron Beck (Becks & WETA, 2010). ....................................................................................................................................................... 273
Figure 269 General Atomics MQ-9 Reaper UAV drone (Battlespace Flight Services, 2010). ....................................................................................................................................................... 276
Figure 270 Plastic model kit of MQ–9 Reaper (Italeri, 2012) ........................................................................................................................................................................... 279
Figure 271 American Military Robots (CNN, 2011). ........................................................................................................................................................................................................ 279
Figure 272 The Wild Cat robot (Boston Dynamics, 2013b). ........................................................................................................................................................................................................ 279
Figure 273 The Cheetah robot (Boston Dynamics & DARPA, 2012) ........................................................................................................................................................................................................ 279
Figure 274 Result of drone attack north–western Pakistan (Getty Images, 2013a) ........................................................................................................................................................................................................ 280
Figure 275 Mourning the casualties of a 2006 CIA Drone Strike in Pakistan (Getty Images, 2006) ........................................................................................................................................................................................................ 280
Figure 276 Syed Wali Shah aged—7, killed by a drone strike in Daned Darpa Khel, Pakistan, August 21 2009 (Behram, 2009). ........................................................................................................................................................................................................ 280
Figure 277 Wall–E (Stanton, 2008) ............................................................................................................................................................................................................................................................................................... 281
Figure 278 Trevor Paglen’s Optical Reconnaissance Satellite Near Scorpio (USA 129) (Paglen, 2012) .......... 284
Figure 279 A post to the Instagram photo sharing website by James Bridle for his project, Dronestagram (Bridle, 2013a). ........................................................................................................................................................................................................ 286
Figure 280 James Bridle’s photographic assemblage, The Light of God (Bridle, 2012c) and the 9/11 Anniversary Memorial, Tribute In Light, (The Municipal Art Society of New York & Deng, 2011). ........................................................................................................................................................................................................ 287
Figure 281 James Bridle’s Drone Shadow OZ, Istanbul Turkey (Bridle, 2012a). ............................................................................................................................................................................................................................................................................................... 288
Figure 282 Two C–Prints from Trevor Paglen’s Untitled (Drones) series (Paglen, 2010b). ............................................................................................................................................................................................................................................................................................... 289
Figure 283 Paglen’s Reaper Drone (Indian Springs, NV Distance – 2 miles) (Paglen, 2012). ............................................................................................................................................................................................................................................................................................... 289
Figure 284 Still from the Steven Spielberg film, Close Encounters of the 3rd Kind (Spielberg, 1977)........ 290
Figure 285 Trevor Paglen’s time lapse image from the Other Night Sky series, Keyhole Improved Crystal From Glacier Point (Optical Reconnaissance Satellite; USA 186) (Paglen, 2008). ............................................................................................................................................................................................................................................................................................... 290
Figure 286 Mos Eisley, Star Wars Episode IV: A New Hope (Lucas, 1977). ............................................................................................................................................................................................................................................................................................... 292
Figure 287 Trevor Paglen’s long exposure image They Watch the Moon (Paglen, 2010a). A classified “listening station”, part of the U.S. National Security Agency’s project ECHELON network. ............................................................................................................................................................................................................................................................................................... 292
Figure 288 Trevor Paglen’s The Fence (Lake Kickapoo, Texas) (Paglen, 2013). ............................................................................................................................................................................................................................................................................................... 292
Figure 289 From Thomas Ruff’s Jpegs series, jpeg–ny02 (Ruff, 2013) ............................................................................................................................................................................................................................................................................................... 293
Figure 290 From Thomas Ruff’s Jpegs series, jpeg co01 (Ruff, 2004) ............................................................................................................................................................................................................................................................................................... 294
Figure 291 Ground Zero (Goodwin, 2013) ............................................................................................................................................................................................................................................................................................... 296
Figure 292 Tesla Tower (Shainblum, 2014) ............................................................................................................................................................................................................................................................................................... 306


Bratton, B. (2013, 30/12/13). We need to talk about TED. Retrieved 31/12/13, 2013, from [http://www.theguardian.com/commentisfree/2013/dec/30/we-need-to-talk-about-ted](http://www.theguardian.com/commentisfree/2013/dec/30/we-need-to-talk-about-ted)


Clark, T. J. (2000). The Painting of Postmodern Life? In MACBA (Ed.), *Quaderns portàtils* (pp. 15). Barcelona: MACBA.


DARPA. (2014, 29/03/14). Collaborative Operations in Denied Environment (CODE) Retrieved 01/04/14, 2014, from
https://www.fbo.gov/index?s=opportunity&mode=form&id=165234251cbe2d908b82929350c58b46&tab=core&_cview=0


Deutsche Post DHL (Producer). (2012, 17/05/13). The World In 2050 - Future Study Presented by Frank Appel. [Web Video]


329


Kubrick, S. (Director). (1964). Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb. UK/USA: Columbia Pictures.


Macrae, F. (2013, 14/02/13). Asteroid that could do as much damage as 1,000 atomic bombs will whizz past today (and could knock out your TV signal). *Science*. Retrieved 11/12/13, 2013,
from http://www.dailymail.co.uk/sciencetech/article-2278375/Asteroid-2012-DA14-damage-1-000-atomic-bombs-whizz-past-today.html


