

Greed, fear and irrational exuberance - the deep play of financial and cultural speculation

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University of New South Wales
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Doctor of Philosophy
Thesis and Documentation

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Greed, Fear and Irrational
Exuberance – The Deep Play of
Financial and Cultural Speculation

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'Greed, Fear and Irrational Exuberance – The Deep Play of Financial and Cultural Speculation'

Abstract:

This thesis is based on a body of work completed between 2001 and 2009, comprising performance/installations that addressed the impacts of global financial speculation and the mechanisms of a free-market economy. Arguably, financial speculation has either driven, or profoundly influenced, political policy and social behaviour 'from Wall Street to Main Street'; from the corporate boardrooms of developed nations to the informal markets of nations still struggling to come to terms with the demise of classical socialism in the postmodern world. Each 24-hour cycle of global financial markets, comprising millions of transactions, represents not only objectively calculated risk management, but also a spectrum of speculators' emotions ranging between greed, fear, and 'irrational exuberance'. The performance/installations included in this thesis address the motivations behind speculative market activity, as well as the interaction between the human and technological processes embedded in the markets. Art and cultural critic Brian Holmes posits this interaction as 'deep play', or 'the aestheticized exploration of the actions and gestures unfolding within a global microstructure'. The microstructure referred to in this thesis is that of the global financial market, its foundations, development and impacts on contemporary society. My exploration will unpack aspects of the history and current manifestations of the free-market economy, and while it is not the intention of this thesis to theorise economics, nor the phenomenon of globalization, certain premises will be addressed as relevant to the projects. In the process, shared borders between the financial market and art practice have inevitably become blurred. The methodological enquiry that underscores this thesis does not reject the free-market economy, nor speculative financial activity. Instead, I have suggested that they might be critiqued by means of cultural intervention. I imply that by direct participation in capital flows, and through exposure to the fears and anxieties bred in the financial market's domain, the complex elements that have produced, and continue to produce significant impacts on society, might be better understood.

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Synopsis

This thesis contextualises a series of my performance/installations completed between 2001 and 2009. The projects addressed financial markets and the free-market economy as constructs that have either driven, or profoundly influenced, political policy and social behaviour ‘from Wall Street to Main Street’¹; from the corporate boardrooms of developed nations to the informal markets of nations still struggling to come to terms with the demise of classical socialism in the postmodern world.

The projects considered the socio-historical conditions of contemporary capitalism, as well as the mechanics and strategies of financial speculation made manifest through market trading technologies and their interfaces. Commenting on one of the projects *catchingafallingknife.com* (2002), U.S. art and cultural critic Brian Holmes describes the relation between these processes as ‘deep play’², borrowing from anthropologist Clifford Geertz’ use of the term in his study of ritualised betting in Balinese cockfighting. Geertz posits that the strict formalities of the higher levels of cockfighting, where significant amounts of money are wagered, are as much about the honour and dignity of the participants as they are about material gain – where ‘to engage in such betting is to lay one’s public self, allusively and metaphorically [...] on the line’.³

Holmes ascribes to the notion of deep play ‘the aestheticized exploration of the actions and gestures unfolding within a global microstructure’⁴, which aptly describes my exploration of the mechanisms and gestures of the global financial market; its foundations, development and impacts on contemporary society, where the choreography of the marketplace can be as much a reflection of desire and status as it is about profit motive.

¹ This unattributed expression has become a frequently used metaphor for the relationship between corporate America and the small business interests of America’s middle class.

² Brian Holmes, *Escape the Overcode: Activist Art in the Control Society* (Eindhoven; Zagreb; Istanbul: Van Abbemuseum Public Research #02, 2009), 132.

³ Ibid.

⁴ Clifford Geertz, *The Interpretation of Cultures* (Basic Books, 1973), 434.

Each 24-hour cycle of global financial markets, comprising millions of transactions, represents not only objectively calculated risk management, but also a spectrum of speculators' emotions ranging between greed, fear, and what Alan Greenspan, Chairman of the U.S. Federal Reserve Board in 1996, famously referred to as 'irrational exuberance' when describing the speculative financial market fervour of that decade.⁵ While it is not my intention to theorise economics or globalization, I will address certain premises where appropriate. In the process, shared borders discovered between financial markets and art practice will inevitably become blurred.

For example, a visit to the gallery where the performance/installation *catchingafallingknife.com* was staged, which for three weeks involved the buying and selling of shares in Rupert Murdoch's global media company News Corporation, might have posed problems for a viewer expecting to encounter a work of art. Questions levelled by exhibition viewers addressed the nature of the activity being observed. Was this project evidence of someone's profession in the financial industry? To which criteria and aesthetic categories should one refer when appraising this work? Perhaps the confusion understandably arises when, to paraphrase performance artist Vito Acconci, 'art functions no longer as a noun, but a verb'.⁶

Acconci is relevant here. He once observed, 'You do art as a mathematician, as a physicist, as a biologist'. The wisdom of this conundrum is revealed as he ventures further: 'If there is no point at which it is certain that art is a product of the activity one is engaged in, then it becomes [...] a general attitude of thickening the plot'.⁷

If one struggled to locate the art in *catchingafallingknife.com* – if 'art' seemed no longer adequate in comprehending the experience – then confirming Acconci's view, the attitude of the artist/performer was to encourage a 'thickening of the plot'. Slippages between the role of artist and that of stock

⁵ Alan Greenspan, *The Challenge of Central Banking in a Democratic Society*, address to the American Enterprise Institute for Public Policy Research in Washington, 5 December 1995. Full text: <http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm> (accessed: 13/09/10).

⁶ Frazer Ward, Mark C. Taylor, Jennifer Bloomer, *Vito Acconci* (London; New York: Phaidon, 2002), 10.

⁷ Ibid.

trader were encouraged, for the artist was not so much *being* a stock trader, but *behaving* like one for the purposes of the project. I as artist/performer adopted a repertoire of tactics and employed strategies to achieve ends that were ultimately ambiguous. The result could either be read as a socio-political critique, or simply an endgame between chance and probability.

In fact, the intention of these projects was to critique financial capitalism and its geo-political impact. In so doing it became necessary to understand the language of financial markets and the strategies used to participate in them.

The introduction to this thesis begins with reference to art history. *Systems Aesthetics* touches on Jack Burnham's influential essay 'Systems Esthetics', which refers specifically to examples of the 1960s systems-based work of Hans Haacke. Further art-historical examples provided in this section tender the free-market system and its representation as compelling subject matter for visual artists.

My performance/installations were site-specific either in situation or by allusion. Thus the second art-historical reference in the introduction addresses the notion of *post-studio* practice. In referring to Daniel Buren's seminal 1979 essay, *The Function of the Studio*, which makes mention of the reproduction of Constantin Brancusi's studio at the Centre Pompidou, the thesis projects are contextualised as being outside the conventions of a studio-based practice. They are the result rather of social, economic, cultural and political processes, which have rendered their production and location nomadic.

As each performance/installation supported viewer interaction, the introduction continues by citing Nicholas Bourriaud's key term, 'relational aesthetics', and Antonio Negri and Michael Hardt's critical re-definitions of 'communion' and 'commonality'.

The introduction concludes with a brief summary of my earlier site-specific work, and detailed descriptions of the thesis projects.

Chapter 1, *Understanding the Game of Mammon*, provides an overview of financial markets relevant to the context of this thesis. While it is beyond the scope of this research to comprehensively address key economic theories, many aspects are directly relevant to the thesis projects and are thus referred to. The chapter addresses financial market behaviours and the machinations behind global capital markets where trillions of dollars are turned over daily.

Historically, a number of prominent theories have attempted to explain the cyclic rise and fall of stock market prices and currency values. Sudden and severe market fluctuations such as those common to financial ‘bubbles’ and their subsequent rapid deflation are characterised in market parlance as ‘booms and busts’. There have been a number of these events in recorded economic history, the most notable early bubbles being the 17th century Dutch tulip mania and the British 18th century South Sea scheme. The first to have reverberations through the 20th century was the Wall Street market crash and subsequent global depression of 1929. However, within the scope of this thesis I intend to focus on the nature of financial speculation from the post WWII period to the present.

The trajectories of booms, busts and bubbles have been a preoccupation of analysts who question whether or not clear patterns can be discerned, or whether such events are entirely random. Chapter 1 introduces the terms ‘fundamental analysis’ and ‘technical analysis’. These approaches form the basis of market analysis, with the first concentrating on economic factors, and the second on the market’s graphic representation. The ‘random walk hypothesis’ and ‘efficient market hypothesis’ are also introduced. These theories propose that the ebb and flow of prices are not governed or influenced by any discernible factors other than supply and demand. The chapter goes on to refer to the deregulation of financial markets subsequent to the 1944 Bretton Woods Agreement⁸, which was a key factor in the transformation of money as hard currency backed by the gold standard, to its current immaterial, digital manifestation on a computer screen.

⁸ Named after the American town in New Hampshire where representatives of forty-four participating nations met to stabilise fluctuating global exchange rates, but allow for a degree of domestic economic policy freedom in order to stimulate production and thus maintain employment growth.

Also discussed is sociologist Saskia Sassen's suggestion that the development of online technologies, in particular computer trading software, has given rise to a market that is a close approximation of the neoclassical notion of an 'ultimate market', one that is entirely governed by supply and demand. According to Sassen a decentralised and deregulated market ensures that all participants, whether commercial or domestic, have equal access to information affecting the market. All participants can thus freely respond to supply and demand forces, validating the notion of a free-market ideology.

Chapter 2, *Democratising Capital and Culture*, introduces the speculator as a figure who, according to sociologist Alexander Preda, exercises a moral and social right to seek profit from financial markets. Preda makes the distinction between investing and speculating – the former engaged in seeking long-term yield from capital outlay, and the latter primarily concerned with taking short-term advantage of fluctuations in price movements. Speculation as a positive force in the economy is discussed as a mobiliser of otherwise dormant capital, thus invigorating markets and the economy by ensuring liquidity. The figure of the speculator is identified as coming into its own in 19th century Europe, accompanied by ambivalent public opinion: under threat of death during the French Revolution, but finding support in mid-century from an unlikely source, self-proclaimed revolutionary, socialist and anarchist, Pierre-Joseph Proudhon. Also addressed is the rationalism of the 1850s that saw market analysis and speculation increasingly regarded as a science. The idea of a rational, efficient market, which should be left to its own devices, extends to the present day as espoused by Milton Friedman's 'Chicago School' of economics.

The chapter then considers the decades of the 1980s and 90s, characterised by vigorous but volatile activity on financial markets, especially in the U.S. This pivotal period saw a number of financial crises, keenly felt in the Asian region, with global economies under pressure to acknowledge the supremacy of the U.S. dollar. These decades also saw the advent of the Internet, increasing public access to data networks. Economist Robert Shiller sees the

post-1987 stock market crash era of the early 1990s as marked by the increasing appearance of a new breed of speculator: the privateer day trader, trading for a living and bypassing the middleman stockbroker by connecting directly into global markets via Internet trading platforms. This was a time of hunger for information, not only financial but also political and social – anything that might provide a hint of how the markets might respond to global news. The newly formed cable media networks enthusiastically serviced this fledgling age, defined by the increasing need for on-the-spot information.

Discussion in this chapter on the role the digital revolution in the democratisation of syndicated media networks is framed by what Jean Baudrillard has termed the ‘deregulation’ of photography, where digital innovations now render it a pliable and fluid medium. The digital revolution also made possible the instantaneous global transmission of images via the Internet, which in effect has wrested the control of image distribution away from syndicated media networks and transferred it to the public domain. The impact of instantaneous image transfer is discussed in terms of Paul Virilio’s notion of global tele-surveillance. A distinction is made between the delayed-time information transmission of the pre-digital era, and real-time transmission as characterised by social media networks.

Chapter 3, *First-person Trader*, offers a comparison between market speculators using Internet-based trading platforms, and players of online, multiple-user computer games. Both sets of participants find themselves located in what Virilio refers to as a ‘teletopographical’ environment comprising real-time data streams. Here, the gameplay inherent to these virtual environments produces the same range of emotions as would be experienced on a live trading floor or an Afghan battlefield; that is, to all intents and purposes, the participants *are* experiencing reality. The virtual reality of the computer game and its simulation software provided the platform for the ‘9/11’ scenario I created in *Avatar* (2005).

The online role-playing game *Second Life* is examined in detail, specifically with regard to its virtual financial system. The ‘Linden dollar’ trade of *Second Life* simulates that of an actual economy and has even become a real-world

market in its own right, with the Linden dollar actively bought and sold for U.S. dollars on online auction sites.

Discussed in the second part of this chapter, with reference to sociologist Karin Knorr-Cetina, are the cognitive and immersive virtual environments of online computer games and global financial markets. She describes the relationship that traders form with the screen in processual terms – as a time or ‘flow world’. For Knorr-Cetina, the trader’s computer terminal is more than a means to enact transactions. The screen forms a scopic portal into a shared world, visible to all participants, extending the market’s reality to create a global co-presence across time zones.

Chapter 4, *Reading the Signs*, looks into the elements that constitute the financial market as a complex system. Research into complex systems makes up a broad area of study, ranging from investigations into the behaviour of ant colonies to the manner in which adaptive ecosystems are influenced by weather patterns.

The components of a complex system interact with each other in manifold ways that adapt and evolve over time producing changes that can give the appearance of spontaneous self-organisation. In financial markets thousands of investors and speculators are engaged in the market at any one time and, given that through their transactions millions of new elements will be added or subtracted from this complex system, patterns will inevitably be discerned as emerging from their collective behaviour. From time to time the market will display chaotic behaviour with extreme fluctuations. Discernible economic events or even the cascading effects of rumour, characteristic of market bubbles, can trigger these behaviours. It is the influences of the latter that can alter the appearance of a market from being an efficiently functioning organism to one that is chaotic and randomised. The task of technical analysis in the financial industry is to identify patterns in either regular or volatile price movements that might lead to short, medium or long-term trends.

Financial markets are represented in visual terms by a vast range of graphic indicators typified by stochastic charts available on proprietary online trading

platforms, accessed from financial data providers, or even drawn by hand. These representations of the market display a complex visual aesthetic and sign structure revealing to the finest degree the detail that comprises the market as a cybernetic or regulatory system.



Candlestick chart of the Euro/U.S. dollar illustrating trend, support and resistance lines, moving averages and Fibonacci progressions (Source: IG Markets)

This chapter also provides a brief history of technical analysis and in particular that of the *Candlestick Method*, which has its origins in the rice trade of 17th century Edo period Japan. This technique represents the ebb and flow of supply and demand through an intricate series of pictograms, the accumulating patterns of which are uniquely and poetically named. The *Candlestick Method* was the technique used to illustrate trading strategies and market fluctuations in two major projects, *NCM open/high/low/close* (2001) and *catchingafallingknife.com* (2002), included in this thesis.

The final chapter of the thesis, *Global Flows*, begins by recalling the 2002 Bush Administration Secretary of Defense, Donald Rumsfeld's 'unknown unknowns', referred to in the context of events such as 9/11 and the Iraqi weapons of mass destruction scandal. The chapter looks at the activities of the U.S. Defense Advanced Research Projects Agency (DARPA), which was established in 1958 during the Cold War years to 'maintain the technological

superiority of the U.S. military and prevent technological surprise from harming [...] national security'.⁹

Since the events of 11 September 2001, DARPA's efforts have been focused on potential terrorist threats to U.S. national security. In July 2003, the agency launched its short-lived Policy Analysis Market (PAM). The project launched a futures trading website whereby speculators could bet on a range of possible significant international events, such as the assassination of a world leader, and regime changes in the Middle East. DARPA hypothesised that if there was sudden futures trading interest in a geo-politically sensitive region, the spike might provide prior warning of a major political event.

The chapter also considers the 'Star Gate' program of the CIA, which experimented with parapsychological phenomena such as precognition to try and predict geo-political events of significance to the United States. Integral to these experiments is the technique of *Remote Predictive Viewing*, which formed the basis of my performance/installation of the same name presented at the Banff Centre in 2008.

The concluding section of this chapter is intended as a counterpoint. It presents a perspective on Cuba, a country that can arguably be described as being, according to the rhetoric of Fidel Castro, the most consistent and vociferous critic to date of the West's capitalist economic model. The chapter provides a brief background of the present day Cuban economy, a period that has coincided with the rampant development of financial capitalism in the United States, Europe and Asia. The Cuban overview takes in the country's informal market economy, the means by which the majority of its population augments a subsistence income.

The chapter includes a précis of the Havana Biennale (*Bienal de La Habana*) as a cultural tourism event that has assumed major significance in Cuba's economic development, specifically as tourism has superseded agriculture and mining to become the country's major source of foreign income. The international biennale phenomenon is included in the discussion, which

⁹ See: <http://www.darpa.mil/> (accessed: 13/03/10).

questions the viability of the event as a platform for political critique. The 10th Havana Biennale (2009) was the occasion for my performance/installation *The Force of Desire/The Force of Necessity*, which addressed Cuba's contemporary *realpolitik*.

Introduction:

i. Key Art-historical References:

a. Systems Aesthetics

The real-time systems aesthetics of financial markets and human agency in the market's everyday functions are key features of the projects presented in this thesis. My interest in systems aesthetics can be linked to developments in American art of the 1960s, inspired by research into the structure of regulatory systems foregrounded by mathematician Norbert Wiener's theory of cybernetics. A prominent voice in describing the links between art practice and real-time systems has been art and technology visionary, Jack Burnham. His essay, *Systems Esthetics*, paved the way for the identification of art that functions as a socio-technical system or structure. Burnham coined the term 'unobject' to describe process-based works that were distinctly different from the objects that he referred to as 'the finite, unique work of high art'. Burnham announced, 'we are now in transition M [sic] from an *object-oriented* to a *systems-oriented* culture. Here change emanates, not from *things*, but from the *way things are done*.'¹⁰

Burnham offers Hans Haacke's systems-based work of the 1960s as an art world exemplar of systems aesthetics. These works included *Chicken's Hatching*, featuring a serial grid of commercial chicken-hatchers performing precisely the function for which they had been designed; *Sky Line*, a nylon line kept aloft by hundreds of helium-filled balloons, and *Condensation Cube*, in which a small amount of water at the bottom of a minimalist glass cube gradually condensed into droplets on the cube's sides as the flows of gallery visitors warmed the air around it. At night when the gallery emptied, the droplets rolled down to join the water at the base of the cube.



Hans Haacke,
Condensation Cube, 1963-65

¹⁰ Jack Burnham, *Systems Esthetics*, reprinted from *Artforum* (September 1968), http://www.arts.ucsb.edu/faculty/jevbratt/readings/burnham_se.html (accessed: 2/03/10).

In his essay, Burnham quotes Haacke:

A 'sculpture' that physically reacts to its environment is no longer to be regarded as an object. The range of outside factors affecting it, as well as its own radius of action, reach beyond the space it materially occupies. It thus merges with the environment in a relationship that is better understood as a 'system' of interdependent processes. These processes evolve without the viewer's empathy. He becomes a witness. A system is not imagined, it is real.¹¹

Burnham does not refer to Marcel Duchamp in his essay, however it is perhaps with Duchamp's 1919 purpose-drawn *Tzanck Check*, which he offered as payment for services to his dentist (Dr. Tzanck), that an engagement with social and relational systems first became an artistic strategy.



Marcel Duchamp,
Tzanck Check, 1919

Between 1959 and 1962 Yves Klein offered up empty space for sale in exchange for payment in gold. The transaction culminated in Klein's proposal to consign half of the gold payment to the River Seine if the purchaser agreed to burn the certificate of sale. In 1969, Les Levine purchased shares in the Cassette Cartridge corporation and indicated in a press release, which itself became part of the material evidence of his subsequent artwork, that: 'After a period of one year, or at any time which it is



Yves Klein,
Zones of Immaterial Sensibility,
1959-62

¹¹ Ibid.

deemed profitable prior to that, the Cassette Cartridge shares will be resold. The profit or loss from the transaction will become the work of art.'¹²

Also in 1969, in the *Anti-Illusion* exhibition at the Whitney Museum, Robert Morris' work, *Money*, took the form of a transaction in which he negotiated a \$100,000 loan from a stockbroker/collector, underwritten by the museum. The terms of the loan stipulated five percent interest for the duration of the exhibition. The capital was invested in a five percent interest bearing account with the Morgan Guaranty Trust, with the museum as beneficiary. At the close of the exhibition, the principle plus interest was withdrawn from the bank and paid to the stockbroker/collector who then made a tax-deductible donation to the museum in the amount of the five percent interest. The cycle was then completed by the Whitney Museum paying the same amount to Morris as his artist's fee.¹³

These works were arguably lyrical in nature, but in 1971, with Haacke's *Shapolsky et al. Manhattan Real Estate Holdings, A Real-time Social System as of May 1, 1971*, which displayed by means of photographs, lists and charts the questionable business transactions of a New York slumlord, the machinations of capitalism and its social impacts became a source of increasing interest for artists engaged in social critique.



Hans Haacke,
Shapolsky et al. Manhattan real Estate Holdings,
A Real-time Social System as of May 1, 1971
(detail)

With the developments in digital technology in the 1990s, the day-to-day workings of financial markets could be visually represented on home computers. Data transfer from markets to the public domain via the Internet became commonplace, and during the late 1990s e-commerce boom, fired by the digital revolution, a number of U.S. artists looked to financial markets and technology for inspiration and as a means to critique capitalism. Nancy

¹² See: Lawrence Wechsler, *Boggs: a Comedy of Values* (Chicago: The University of Chicago Press, 1999).

¹³ Ibid.

Paterson's 1998 *Stock Market Skirt* takes as its inspiration anthropologist Desmond Morris's theory that women's fashion, in particular hemlines, reflects the state of financial markets.¹⁴ The theory suggests that in favourable economic times, as the prices of stocks rise so do women's hemlines. With a decline in prices – in an economic recession for example – there is an attendant lowering of dress hemlines.

Paterson's 'skirt' is actually a party dress made of black velvet and blue taffeta draped on a seamstress' mannequin. The ensemble is displayed together with a number of computer monitors of varying sizes, each scrolling a stock price. The stocks are selected from a live stock market data feed, using a computer algorithm similar to that used in sophisticated trading platforms to identify significant price movements. The hemline is controlled by a series of step motors hidden under the dress that cause it to be raised in response to a favourable market, and lowered in the opposite case. The artist describes the work as a 'cyber-feminist fashion statement', and a response to 'the convergence of technology, fashion and feminism'.¹⁵



Nancy Paterson, *Stock Market Skirt*, 1998

While Paterson's *Stock Market Skirt* translated stock market numbers as algorithms that could drive real-world servomotors, new media artist John

¹⁴ See: Desmond Morris, *The Naked Ape: a zoologist's study of the human animal* (London: Cape, 1967). Morris revisited American economist George Taylor's 1926 Hemline Index theory.

¹⁵ Nancy Paterson, 'Stock Market Skirt: the Evolution of the Internet, the Interface, and an Idea', in *Database Aesthetics*, ed. Victoria Vesna (Minneapolis; London: University of Minnesota Press, 2007), 223.

Klima's 2001 work, *ecosystm*, commissioned by Zurich Capital Markets, tapped into live streaming market data and, via computer animations, represented the movements, volatility, and relative values of foreign exchange as the swarming patterns of birds. Each creature was attributed a currency and a fluctuating value. Similarly, global stock market indices took the form of treelike structures that flourished in response to a good economic climate, and shrank as the economy and index values receded. *Ecosystm* was interactive, allowing users to navigate the virtual environment and observe the behaviours of the currency birds and index trees. The streaming data caused the birds to fly around in an orderly manner if the economy was stable, but market volatility caused their flight patterns to contract and in extreme cases, under recessionary pressures for example, the birds would begin to consume their respective country's index tree. If they represented a dominant currency such as the U.S. dollar, they would even attack other birds in response to the devaluation of minor currencies.¹⁶



John Klima, *ecosystm* (detail), 2001

At the start of the current global financial crisis, the Derivat group's 2009 *Game Broker* project presented three games using the original Nintendo *Game Boy* platform. Each of the three games reflected on past financial crises in the 1980s, 90s and the dot-com crash of 2000.

¹⁶ John Klima, 'Aesthetics of *ecosystm*' in *Database Aesthetics*, ed. Victoria Vesna (Minneapolis; London: University of Minnesota Press, 2007), 260-268ff.

The games allow the player to learn about the reasons for each crisis, engage with economic bubbles, and learn key information about them. For instance, it brings up issues such as soaring oil prices in the early 1980's, the surge in interest rates in beginning of the 1990's, or the technology stocks during the dot-com bubble.¹⁷



Although these recent examples of intersections between art, technology and finance were not actually embedded in the market's trading environment, and were essentially concerned with making visible the data generated by market conditions, the projects encouraged reflection on the ethics of the free-market system and the increasing potential for new media artists to engage in socio-economic systems.

b. Post-studio Practice and Situational Aesthetics

In his seminal 1971 essay, 'The Function of the Studio', Daniel Buren remarked that the fundamental nature of an artwork irrevocably changes when it is separated from the traditional locus of its production – the artist's studio. Removed from the studio and placed in galleries and museums such artworks, according to Buren, become aligned with other artworks already located there, 'giving the impression of a cemetery'.¹⁸ For him, it is the site of production that represents the essential context through which an artwork should be read. Questioning the very nature and validity of studio practice, Buren cites a case in point concerning what represented for him *the* essential artist's studio, that of Constantin Brancusi.

Attempting to avoid a number of his iconic sculptures being removed from their site of production upon his death, Brancusi stipulated that his Montparnasse studio, left in legacy to the City of Paris, should be preserved with its contents intact, affording the visitor, as Buren put it, 'the same perspective as [the artist] at the moment of creation'. Four years after Brancusi's death in 1957, the building that housed the studio was threatened with demolition. Claiming the studio impossible to preserve in its increasingly

¹⁷ See: <http://www.derivat.info/index.php?s=&lang=en> (accessed: 12/12/10)

¹⁸ Daniel Buren, *The Function of the Studio*, first written in 1971, trans. Thomas Repensek, *October* 10 (Fall 1979), 58ff.

decrepit location, curators created a mock-up of the studio at the Musée d'Art Moderne, relocating the original sculptures to it.

Instead of providing the viewer with a sense of the 'moment of creation', the reproduction of the studio negated any apprehension of that moment.¹⁹

Through the act of restaging, Buren conjectured, the essential function of the studio as the valid locus of production and thus site of the artwork's meaning, had been called into question.



Left: Brancusi in his Montparnasse studio circa 1925 (detail)

Right: Brancusi's re-staged studio at the Centre Pompidou circa 1997 (detail)

Buren attempted to resolve the problematical nature of studio-produced art whose fate it was to be shipped to 'museum cemeteries' by focussing his own practice on site-specific interventions, relying on the attributes of the location to create the context and qualifiers for his work. Historically, his essay presaged the unhitching of the avant-garde from studio-based practice, a process that gained momentum in conceptual art strands of the 1970s and site-specific projects of the decades that followed. The term 'situational' began to be applied 'to new impermanent modes of art that emphasised the experimental, temporary situation over the "stable" art object', as Kirsi

¹⁹ Buren's concerns were reignited in 1997 when, seven years after a second Brancusi studio recreation was closed due to increasing curatorial criticism, Renzo Piano was commissioned to design the building currently housing the restaged studio on the Centre Pompidou site. Piano's structure was modelled on the Brancusi studio's original shape and volume, however naturalistic material references were avoided for conservation reasons. The studio area was glassed-in with the removal of the third and fourth wall to create a viewing ambulatory. Missing are the traces of plaster and stone dust, as is the casual clutter or residue of Brancusi's presence. What remains is a hermetically sealed simulacrum. The function of the studio has been reduced to an abstraction that is timeless and devoid of historicity.

Peltomäki, writing on the work of Michael Asher, describes it.²⁰ These initiatives included the methodical analysis of the workings of art institutions by artists such as Asher, Buren, Marcel Broodthaers and Hans Haacke. In the 1970s and early 1980s, Asher started locating the production and presentation of his work within galleries and museums, deriving their meaning from the formal organisational structures of those institutions.

In reprising artist-theorist Victor Burgin's use of the term 'situational aesthetics' – describing the locating of art 'within the linguistic infrastructure, which previously served to merely support [it]'²¹ – Asher saw his work as comprising:

[...] an aesthetic system that juxtaposes predetermined elements occurring within the institutional framework, that are recognizable and identifiable to the public because they are drawn from the institutional framework itself.²²

Institutional critique is the primary intention of the projects I've elected to present in this thesis. However, the frameworks to which they refer are physical or virtual sites outside of the artworld context in which they were exhibited. For example, the real-time trading activities of *catchingafallingknife.com* were embedded within the online systems of the Australian Stock Exchange; the virtual 'ground zero' of *Avatar* was a CGI representation of a real office tower housing government departments and merchant banks in the central business district of Sydney; while *The Force of Desire/The Force of Necessity* drew on Havana's informal market economy. Instead of having a fixed locus, the aesthetics of these projects were embodied rather by a series of nomadic systems, situations, or sets of conditions. Miwon Kwon describes this state as 'an understanding of site [that] has shifted from a fixed, physical location to somewhere or something constituted through social, economic, cultural and political processes'.²³ This

²⁰ Kirsi Peltomäki, *Situation Aesthetics: the Work of Michael Asher* (Cambridge, Massachusetts: The MIT Press, 2010), 12.

²¹ Victor Burgin, 'Situational Aesthetics', *Studio International*, Vol. 178, No. 915, 1969, 1. See: http://www.ubu.com/papers/burgin_situational.html (accessed: 20/12/10)

²² Peltomäki op. cit., 12.

²³ Quoted in Claire Doherty, *Contemporary Art: from Studio to Situation* (London: Black Dog Publishing, 2004), 10.

is essentially, as Kwon suggests, 'a state of flux which acknowledges place as a shifting, fragmented reality'.²⁴ The site-specificity of these projects is better described as being 'situation specific', with the production of the work inseparable from its performance.

c. Relational Aesthetics

The five projects to be contextualised in this thesis contained performative elements that encouraged direct encounters with viewers. Their active engagement with the public can be described in terms of Nicholas Bourriaud's relational aesthetics rubric as occurring in 'the realm of human interactions and its social context, rather than as the assertion of an independent and private symbolic space'.²⁵ Bourriaud regards this reframing as counter to the archetypally modernist, Greenbergian figure of the artist as active 'transmitter' who relegates the viewer to the status of passive 'receiver'. Claire Bishop's evaluation of Bourriaud's relational art supports this rejoinder, defining the performer/viewer relationship in this context as consisting of 'intersubjective encounters (be these literal or potential) in which meaning is elaborated collectively rather than in the privatised space of individual consumption'.²⁶

Referencing Umberto Eco's 1960s concept of the 'open work', which emphasizes multiplicity, plurality, and interpretation and response as interactive processes between reader and text²⁷, Bourriaud notes that the conventional, virtually contractual relationship between artist and viewer underwent a transformation in the art of the decade to which Eco refers. This change was manifest in the spectator participation and interaction typified by the 'happenings' of Allan Kaprow and the dissolution of the boundaries between art and life espoused by the Situationists. However, Bourriaud acknowledges, citing French media scholar Pierre Lévy, that these and other late 20th century antecedents of the 'open work' could still be said to be limited, with the spectator invited only to 'fill in the blanks, to choose between

²⁴ Ibid.

²⁵ Nicholas Bourriaud, *Relational Aesthetics*, trans. Pleasance and Woods (Dijon: Les presses du réel, 2002), 14.

²⁶ Claire Bishop, 'Antagonism and Relational Aesthetics', *October* 110, Fall 2004, 88.

²⁷ See: Umberto Eco, *The Open Work*, trans. Anna Canciani (Cambridge, Massachusetts: Harvard University Press, 1989).

possible meanings'.²⁸ It was perhaps only with the development of digital technologies and widespread access to the Internet that an unreservedly interactive relationship between producer and viewer was ultimately signalled.

Relational art serves in part as a valid model for the projects presented in this thesis. However, they diverge from a neat comparison with Bourriaud's 'micro-communities' and 'micro-utopias', united in shared resources and accompanied by a certain sense of conviviality (as represented in the oft-quoted meals prepared by artist Rirkrit Tiravanija, for example). A more appropriate point of reference might be made in terms of what Hardt and Negri regard as the consequences of 'informatization'²⁹ whereby commonality, and thus communion, are the result of increased interaction within the information infrastructures embedded in production processes. In this context, 'the emerging technocultural environment encourages the development of new types of art that ignore the separation between transmission and reception, composition and interpretation'.³⁰

Bishop has observed that the goal of relational art is to establish the audience as a community, rather than being limited by the 'one-to-one relationship between work of art and viewer'.³¹ The projects presented in this thesis encouraged situations whereby, either directly or by extension, viewers have been able to function beyond a state of passive reception. As Bishop suggests, however temporary or utopian this status might be within the relational paradigm³², the collective intelligence thus formed facilitates viewers becoming producers in their own right. This process contributes significantly to the overall circumstances and life of each project, and to a better understanding of the agency and responsibility of both artist and viewer.

²⁸ Nicholas Bourriaud, *Postproduction* (Siena: Galleria Continua, 2003), 88.

²⁹ Michael Hardt, Antonio Negri, *Empire* (Cambridge, Massachusetts; London: Harvard University Press, 2000), 300ff.

³⁰ Ibid.

³¹ Bishop op. cit., 53.

³² Ibid.

ii. A Context for the Thesis Projects:

The period of research for this thesis spanned major economic, political and social events that took place in the first decade of the new millennium. These included the end of the 'dot-com' boom; the attacks on the World Trade Centre; the Bush Administration's 'shock and awe' invasion of Iraq; the Australian Government's 'be alert, not alarmed' anti-terrorism campaign; the advent of Internet social networking and mobile phone imaging applications, and the U.S. subprime mortgage debacle that led to the beginning of the global financial crisis in 2008.

In understanding the formation of the thesis projects, it will be useful to consider my earlier site-specific installation and curatorial projects located in Australian colonial heritage sites between 1995 and 2000. *A Humble Life* (1995)³³ and the six-month curatorial project *Artists in the House!* (1997)³⁴ were produced under the aegis of the Historic Houses Trust of New South Wales at Elizabeth Bay House, Sydney. *Ground Zero* (1997)³⁵ was produced for the Royal Botanic Gardens and Domain Trust, Sydney, as was *Swelter* (1999/2000)³⁶, a nine-month curatorial project.

My explorations of these sites were not so much concerned with a celebration of preserved material culture. Nor was the intention a nostalgic recreation of past eras. My interest lay rather in a critique of the conventions of museological display and the institutional presentation of cultural information depicting Australia's colonial history. Most re-presentations of historic sites including Elizabeth Bay House are the result of the cultural assumptions and curatorial bias of the host institutions. Anthropologist Ivan Karp suggests that in the attempt to evoke bygone eras, history is often sanitised and decisions are made to emphasise some elements and to downplay others: in Karp's

³³ See: http://www.michaelgoldberg.info/projects.php?p=1995_A_Humble_Life

³⁴ See: http://www.michaelgoldberg.info/curatorial.php?c=1997_Artists_In_The_House
Artists: Tom Arthur, Jacqueline Clayton, Aleks Danko, Jackie Dunn, Bonita Ely, Chris Fortescue, Adrian Hall, Nigel Helyer, Anne Graham, Debra Phillips, Julie Rrap, Martin Sims, Ken Unsworth, Anne Zahalka.

³⁵ See: http://www.michaelgoldberg.info/projects.php?p=1996_Ground_Zero

³⁶ See: http://www.michaelgoldberg.info/curatorial.php?c=1999_Swelter
Artists: Jackie Dunn, Anne Graham, Tom Arthur, Debra Phillips, Martin Sims, Nigel Helyer, Joan Grounds and Sherre Delys.

See also: *Trouble in Paradise – an Artists' Project for the Royal Botanic Gardens*,
<http://www.artdes.monash.edu.au/non-cms/globe/issue11/mgtxt.html>

words, 'inevitably to assert some truths and to ignore others'.³⁷ In the projects of this early period I intended to address the contentious aspects of history, those often ignored by the heritage industry.



Left: Michael Goldberg, *A Humble Life*, 1995 (detail)

Right: *Artists in the House!* 1997, curator: Michael Goldberg, artist: Tom Arthur (detail)



Left: Michael Goldberg, *Ground Zero*, 1997 (detail)

Right: *Swelter*, 1999/2000, curator: Michael Goldberg, artist: Jackie Dunn (detail)

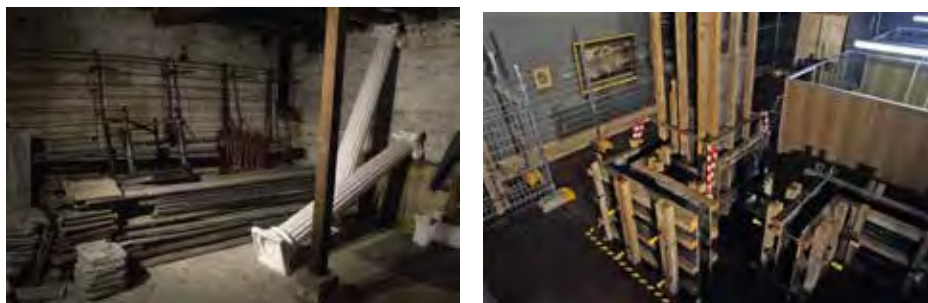
By 1997, my research into colonial-era historic houses led me to Tusculum House, 1830s residence of local entrepreneur, Alexander Brodie Spark. Spark's idyll overlooking the entrance to Sydney Cove was built on one of the several nine-acre land grants awarded by Governor Darling to colonial government officials and prominent businessmen, on Woolloomooloo Hill (now known as Potts Point). The design of the villas was to be approved by the Governor and, as architectural exemplars, strict criteria specified that structures and gardens were to be valued at over £1,000, face towards Sydney and provide a picturesque sight to newcomers as they sailed into Sydney Cove, thus acting as 'an example and chastisement to the debased population of Sydney Town'.³⁸ The project that emerged from this study, *Real/*

³⁷ Ivan Karp and Stephen D. Lavine, *Exhibiting Cultures: The Poetics and Politics of Museum Display* (Washington; London: Smithsonian Institution Press, 1991), 1.

³⁸ Terry Kass, *The History of Tusculum* (New South Wales: Heritage Council Research Study #3, 1983), 3.

*Estate*³⁹, examined Brodie Spark's land grant, and represented an attempt to determine the current real estate value represented by the original nine acres.

In 1999, the influence of big business over town planning was represented in *The Well Built Australian*⁴⁰, a large-scale installation exhibited at the Art Gallery of New South Wales. This work was intended to critique the insidious gentrification of the former working-class suburb of Woolloomooloo and the real estate encroachment along the Sydney Harbour foreshore. The project focused on the commercial interests of the construction companies Multiplex⁴¹ and Walker Group in the Finger Wharf, a heritage structure stretching out into Woolloomooloo Bay at the foot of the state art gallery.



Left: Michael Goldberg, *Real Estate*, 1997 (detail)
Right: Michael Goldberg, *The Well Built Australian*, 1999 (detail)

Shortly after *The Well Built Australian*, my focus on Australia's early social history and the machinations of the 19th century colonial period registered a shift. Edward Said in *Culture and Imperialism* refers to the colonial period of English history as the 'business of empire'. But it was Said's concise inversion of that term into the 'empire of business'⁴², which he characterised as the transition from an era of territorial hegemony to the modern era of industrialisation and commercial development, that would inspired my future research. I then began to address the subsequent 20th century free-market economy, the rise of global corporate culture, and the unbridled financial speculation of the new millennium. These became the primary concerns of this thesis.

³⁹ See: http://www.michaelgoldberg.info/projects.php?p=1997_Real_Estate

⁴⁰ See: http://www.michaelgoldberg.info/projects.php?p=1999_The_Well_Built_Australian

⁴¹ *The Well Built Australian* was the advertising slogan of the now defunct Multiplex construction company.

⁴² Edward Said, *Culture and Imperialism* (London: Vintage, 1994), 25.

iii. The Thesis Projects:

2001: *NCM open/high/low/close* (in *Auriferous: the gold project*, curated by Amanda Lawson and Craig Judd), Bathurst Regional Art Gallery, Bathurst, New South Wales.

2002: *catchingafallingknife.com*, Artspace Centre for Contemporary Art, Sydney.

2005: *Avatar* (in *Disobedience*, curated by David McNeill and Zanny Begg), Ivan Dougherty Gallery, Sydney.

2008: *Remote Predictive Viewing*, Banff Centre, Alberta, Canada.

2009: *La Fuerza del Deseo/La Fuerza de la Necesidad*⁴³, 10th *Bienal de La Habana*, Havana, Cuba.

NCM open/high/low/close performance/installation (in *Auriferous: the gold project*, curated by Amanda Lawson and Craig Judd), Bathurst Regional Art Gallery, Bathurst, New South Wales (2001).



*Auriferous: the gold project*⁴⁴ commemorated the sesqui-centenary of the discovery of gold in Australia. The exhibition venue, the Bathurst Regional Art Gallery, is situated close to the Cadia Hill mine, site of the country's first

⁴³ Translated: *The Force of Desire/The Force of Necessity*.

⁴⁴ *Auriferous: the gold project*, Bathurst Regional Art Gallery, 12 April-11 June 2001, curated by Amanda Lawson and Craig Judd. Artists: Stephen Bowers, Andy Davey, Jackie Dunn, Keely Fielding, Michael Goldberg, Alana Harris, Mandy Martin, Margaret West.

successful panning of gold. Cadia Hill is one of the largest open-cut goldmines in Australia and is still productive, operated by Newcrest Mining Limited⁴⁵, one of Australia's major gold producers and among the world's top ten.

My research shifted from an initial focus on gold as a decorative metal to its performance as a globally traded commodity; a safe haven for investors in turbulent economic and political times, and a target for speculation at all times. The corresponding rises and falls of the international spot gold price⁴⁶ and those of the share price of Newcrest Mining Limited on the Australian Stock Exchange reveal a host of indexical relationships. Correlations in trading data and price movements became the focus of the project for *Auriferous*, titled *NCM open/high/low/close*.

'NCM' is the Australian Stock Exchange code for Newcrest Mining Limited, and open/high/low/close (OHLC) is market terminology referring to the *opening* price determined at the 10am start of trading; the intraday *high* price; the intraday *low* price; and the *closing* price finalised at 4:10pm (spot gold would however continue to be traded on 24-hour global markets).



The performance of the project began each morning at 8am at the Australian Stock Exchange (ASX) in Bridge Street, Sydney. Dressed in a pair of white overalls with the Newcrest Mining Company symbol emblazoned on the back, I took a taxi to the airport and caught a regional airline flight to Bathurst, some 200kms away. The manager of the Bathurst Regional Gallery met me at the

⁴⁵ See: www.newcrest.com.au

⁴⁶ 'Spot' gold is the market price of gold for immediate delivery as opposed to delivery at a future date, which is the determining factor for futures and options trading.

local airport and I would arrive at the gallery in time to prepare for the 10am opening of trade on the ASX. In the gallery a 3m high scaffolding platform had been constructed equipped with a computer, printer, telephone, charting pads and drawing implements. Seated on the platform I began a surveillance of the market and the spot gold price, compiling a comprehensive market report by referring to online data. The report was then posted on the gallery wall. Every 5 minutes I leapt off the platform onto a thick high jump mat placed below the scaffolding to update two huge charts that spanned the length and height of adjacent walls in the gallery. One chart, a conventional line graph, tracked the international spot gold price; the other tracked the corresponding share price of the Newcrest Mining Company using the elegant pictograms of the *Candlestick Method*.⁴⁷ Support, resistance and trend lines delineated price movements on the charts, and were notated to indicate key pivot points.



While waiting to update prices I scanned through an online Bible, and began extracting as many references to gold as could be found in the Old and New Testaments.⁴⁸ These were written down on notepaper and posted on the gallery wall. A CCTV camera mounted on the platform recorded my activities, which could be observed on a monitor at the gallery's main entrance. The residue of each day's activities, such as newspapers, coffee cups and pencil shavings, was collected under the platform – the 'tailings' of production. With the 4pm close of the ASX my market surveillance stopped, and I was taken to the airport to catch the flight back to Sydney. This daily cycle – except for weekends when the stock exchange was closed – was repeated for the duration of the exhibition.

⁴⁷ The *Candlestick Method* will be discussed in Chapter 4.

⁴⁸ There are over four hundred references to gold in the Old and New Testaments.



NCM open/high/low/close configured the artist as a conduit between the commodities market and the gallery. My engagement with the public developed into a forum of ideas with gallery visitors, who were encouraged to discuss their views about the free-market economy with me. The day's market activities, the charts, the progress of the gold price and Newcrest Mining's shares were frequent topics of conversation. A significant upward spike of the gold price midway through the exhibition prompted questions such as: 'Did the project have anything to do with the price rise?' and, 'Is it the right time to buy shares in the Newcrest Mining Company?'.

The biblical references to gold pinned to the gallery walls prompted discussion about the morals and ethics of speculation, a popular topic as the dot-com boom had recently come to an abrupt end. One of the more frequent visitors was a man who would make himself comfortable on the padded high-jump mat beneath the scaffolding platform and espouse at length his views on Marxism versus capitalism.

Catchingafallingknife.com, performance/installation, Artspace Centre for Contemporary Art, Sydney (2002).



At 10am on 17 October 2002, with the opening of trade on the Australian Stock Exchange, I assumed the role of a seasoned stock market trader and over a three-week period, with \$50,000 raised from a consortium of speculators/art patrons, I traded shares in Rupert Murdoch's News Corporation, the world's third largest media conglomerate. Michael Hardt and Antonio Negri identify alpha entrepreneurs such as Mediaset's Silvio Berlusconi, CNN's Ted Turner and Rupert Murdoch, as having been able to effectively 'dominate all of the networks'⁴⁹ through their media companies, thus being in a position to influence perceptions about current affairs and even affect the share prices of major companies on global markets. Brian Holmes describes Rupert Murdoch as:

... the owner of the bellicose Fox News channel, and also the *Weekly Standard*, the insider publication of the neoconservatives in Washington. He is a direct supporter of the Anglo-American war coalition who stands only to gain from further extensions of US-style capitalism. As a key player in the construction of satellite TV

⁴⁹ See: <http://www.marxists.org/reference/subject/philosophy/works/it/negri.htm> (accessed: 10/06/10).

systems with global reach, he has helped build the structure of a new imperial politics.⁵⁰



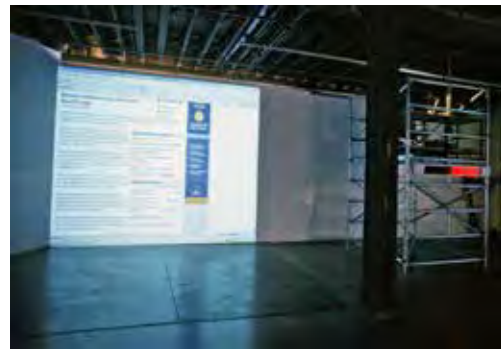
In 2002, News Corporation attracted share transactions to the value of over \$100 million on the Australian Stock Exchange alone. My goal in *catchingafallingknife.com* was to try and profit from the immense flow of capital surrounding this powerful media icon by trading shares in the company.

The title of the project, *catchingafallingknife.com*, was derived from share trader jargon referring to particularly risky market speculation, and the suffix '.com' added in reference to the dot-com boom, which had reached its zenith with the arrival of the new millennium. The dot-com, or e-commerce, boom saw a rapid increase in the number of Web-based companies hoping to exploit the commercial growth of the Internet. Many of these companies relied on highly speculative venture capital, and many were to fail when their exorbitantly high price-earnings ratio could no longer be sustained.

The yearlong preparation for the project involved sustained research into financial markets and the world of online trading. I opened a trading account with HSBC Bank and equipped myself with bona fide trading skills and the know-how to buy and sell shares on a speculative basis. Trading strategies were based on the interpretation of stock charts and information on News Corporation available on a number of financial news websites such as *bloomberg.com*. Trading capital was raised by posting details of the intended project on an online trading chat room (the now defunct *InvestorWeb*). After an intense period of lobbying, funds for the project were secured from a

⁵⁰ Holmes op. cit., 133.

number of speculators. This group was to be known only as 'The Consortium' in order to ensure its members' anonymity. By means of the agreement struck, all profits generated by *catchingafallingknife.com* would be passed on to The Consortium and likewise any losses would be borne by The Consortium. The artist/trader was to act only as an 'agent of risk and reward'.



Strict controls were placed on trading. Daily reports had to be submitted along with running profit and loss statements. It was also agreed that if the capital reserves were to fall below an acceptable margin, the project would be terminated. Flexibility was required of the members of The Consortium. They were market speculators hoping to profit out of the venture, but they would also take on the role of art patron supporting an artist's project. Essentially it was my skill as a stock market trader on which their chances for a quick profit rode, not whether the 'project-as-art' would appreciate in value. Intrinsically the project had no economic or exchange value. It could not be bought nor sold and therefore had no commercial value on the art market. It was my *trading* skills that would have to be evaluated in the project, in addition to my skills as an artist. The Consortium also had to entertain a number of variables: as in any game of chance, the project might fail as a financial proposition yet succeed as art, or vice versa; or both aspects could succeed, or both could fail.

The *catchingafallingknife.com* website⁵¹ featured daily documentation of the project, profit and loss reports, reports to The Consortium, and a public chat room featuring an ongoing dialogue with Dutch media theorist and activist,

⁵¹ The website www.catchingafallingknife.com is no longer active. Its cached contents can be viewed in Appendix 2. In appearance, it mimicked the News Corporation 2002 site.

Geert Lovink. In one exchange we discussed how day traders take positions in the market with little concern for the fundamentals, bottom-line or ethics of the stocks they are trading. I referred to an image from Michelangelo Antonioni's 1966 movie, *Blow Up*, to evoke the emotions of taking a position in the market:

I'm reminded of the character played by David Hemmings who mixes in with rock fans as they fight over the remains of a guitar, trashed on stage at the end of a concert and flung in to the waiting crowd. He emerges the victor, only to discard the prized relic moments later as so much trash – the adrenalin rush of the pursuit having been the only real satisfaction to be gained.⁵²



The project generated critical interest, with Holmes citing it in a number of essays⁵³ as well as in the chapter 'Trading on the Double Edge' in his book *Escape the Overcode: activist art in the control society*. He writes: 'Here, by speculating exclusively on the value of News Corp. stock, he (Goldberg) situates the interactions of a small-time day trader within an arc of power that extends from Australia to the United States, via Murdoch's extensive holdings in Italy and Britain'.⁵⁴ An email exchange between Holmes and myself about the project contained the following description of the installation:

The viewer enters a space devoid of natural light. Three walls reflect the glow of floor-to-ceiling data projections - real-time stock prices, moving average charts and financial news. The values change and the graphs move, unfolding minute-by-minute, second-

⁵² Geert Lovink, interview with Michael Goldberg, 'Catching a Falling Knife: The Art of Day Trading', posted on the *Nettime* list, 16 October 2002; <http://amsterdam.nettime.org/Lists-Archives/nettime-l-0210/msg00080.html>

⁵³ See: <http://brianholmes.wordpress.com/>

⁵⁴ Holmes op. cit., 132.

by-second in a sequence of arabesques and set moves. They respond instantly to constantly shifting algorithms pumping in through live feeds from the global bourses. A desk light and standing lamp in the viewers' lounge reveal a desk and computer, armchairs, and a coffee table with a selection of daily newspapers and financial magazines. Opposite, high on a scaffold platform another desk lamp plays on the face of the artist as he stares at his computer screens. He's talking into a phone, placing or closing a trade. Below him there's the continual sweep of the LED ticker declaring current profit and loss. In the background the audio tape drones. The voice of the motivational speaker, urges you 'to create a clear mental picture of just how much money you want to make – and to decide just how you will earn this money until you are as rich as you want to be'.

catchingafallingknife.com encouraged exchanges between members of the public and the artist/trader. Each day while trading was in progress visitors could relax in the lounge area, read the papers and magazines or engage in discussion either directly with the artist/trader, or via the computer terminal's IRC.⁵⁵ Conversations regularly took place on the *catchingafallingknife.com* website⁵⁶, the subjects of which ranged from the project's profits (or losses), to the workings of the charts and trading strategies.

The project came to the attention of two Murdoch-owned newspapers. A report in the daily national *The Australian* suggested that money from the Australia Council for the Arts (the key government funding body) had been used to speculate on the market.⁵⁷ A front-page story in the business section of the Sydney tabloid the *Daily Telegraph*, featured a double banner headline: 'Profit Rise Lifts News', and 'Murdoch media the latest canvas for artist trader'.⁵⁸ Commenting on this unexpected newsworthiness, media critic Ned Rossiter wrote, 'Here the system of relations between art and commerce indicates the importance that storytelling has in an age of information economies. Whether the price of stocks goes up or down, profit value is not

⁵⁵ Internet Relay Chat network. My nickname was 'McKnife'.

⁵⁶ See: Appendix 2.

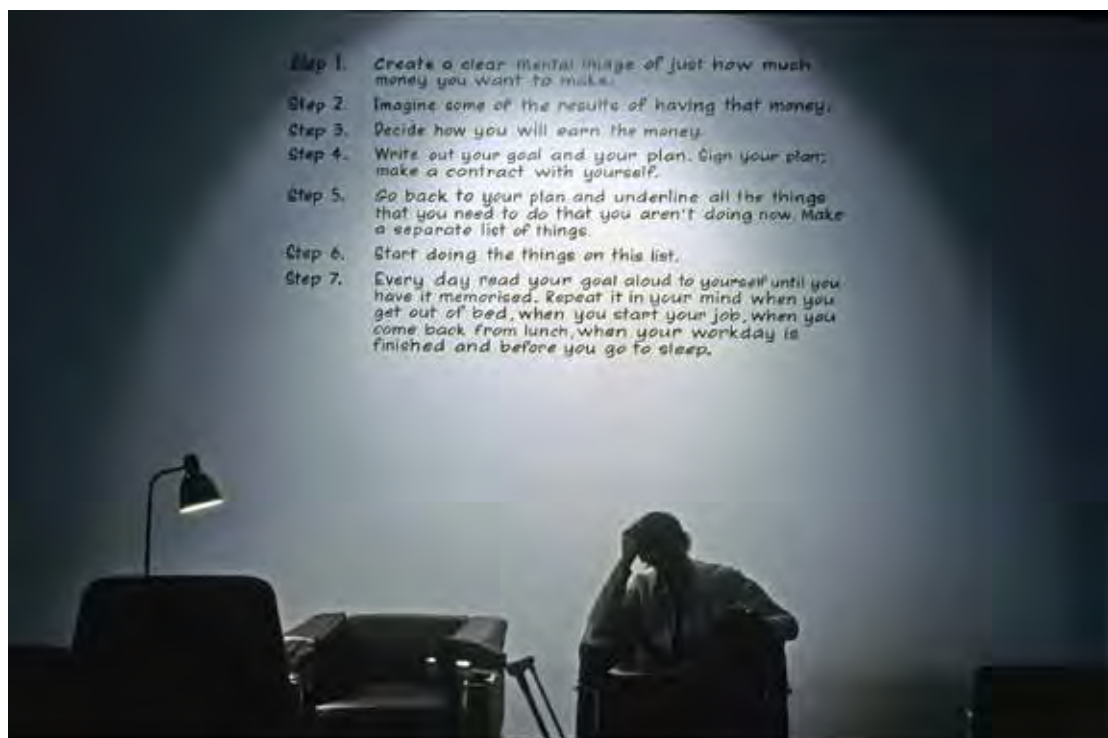
⁵⁷ *The Australian*, Monday, 4 November 2002. The project's infrastructure, including its website, had in fact been funded by an Australia Council for the Arts grant, but no money had been allocated for trading.

⁵⁸ *The Daily Telegraph* (Australia) *Business Section*, Thursday, 7 November 2002.

shaped by the political critique art may offer, but rather by the kind of spin a particular stock can generate.’⁵⁹

Lovink commented that in his opinion the reticence of viewers to discuss the art component of the project was a result of their overwhelming inquisitiveness about whether I was making any money or not. He wrote, ‘The curiosity about the result (of the trading) overrules the more reflective, skeptical point of view of people who wonder if it is an artwork or not’.⁶⁰ In fact, at the end of the specified three weeks, having lost just over \$1000 on speculative trades, it was clear that the attempt to finesse News Corporation had failed. The books were closed, terminating both the project and my stock-trading persona.

The outcome of the project, as Holmes observed, was ‘to reveal the electronic market, with its relation between face and screen, between desiring mind and fluctuating information, as the fundamental device of control within the wartime economy of neo-liberalism in crisis’.⁶¹

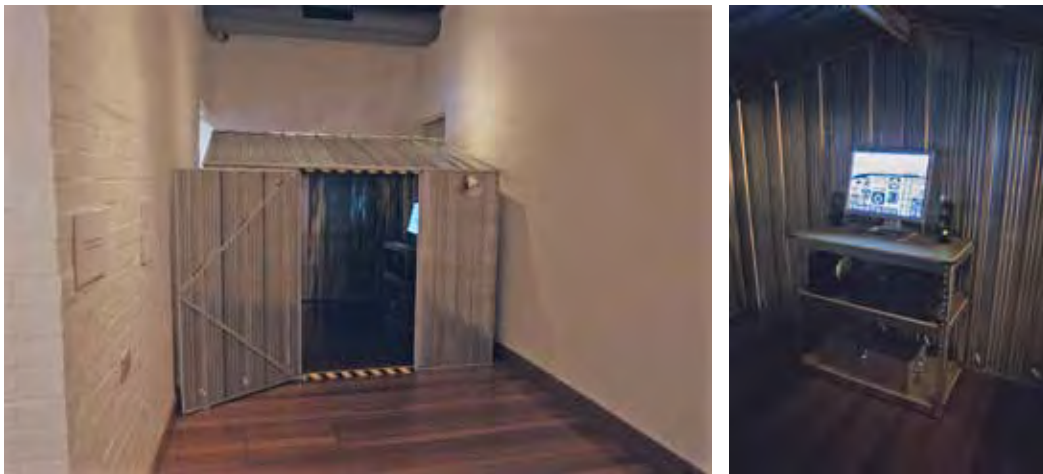


⁵⁹ Ned Rossiter, ‘Day trading aesthetics: playing with Murdoch’, *RealTime +OnScreen* No. 53: Sydney, February-March 2003.

⁶⁰ Geert Lovink, *Conversations with Michael Goldberg*, www.catchingafallingknife.com, November 2002. See: Appendix 1.

⁶¹ Holmes op. cit., 133.

Avatar, installation/virtual performance (in *Disobedience*, curated by David McNeill and Zanny Begg), Ivan Dougherty Gallery, Sydney (2005).



Off-the-shelf computer games provide a ready source of material for artists able to manipulate proprietary software to achieve deviant conceptual and aesthetic outcomes. These are known in the computer gaming industry as 'mods' (modifications). Some game producers even make program-editing tools readily available so that players can 'create their own custom-made additions'.⁶² The availability of do-it-yourself software development packages for simulation and role-play games has constituted a step towards democratising the video game industry, opening it out to more participatory practices.

In *Avatar*, I acknowledged the cultural pliability of computer gaming programs by using Microsoft's *Flight Simulator* as a platform for the project. However, I did not modify its structural software in any way. The program was used exactly as its publishers had first intended – to create an approximation of the visual sensation of flying an aircraft over realistically rendered topographies, cities and their landmarks.

My objective in using *Flight Simulator* was to create a *memoria technica* by edging simulated reality closer to the factual, and narrowing the gap between

⁶² Valve Corporation, the creators of *Half-Life*, a first-person shooter video game, successfully marketed a mod titled *Counter-Strike*. The game was initially developed as a modification by two gamers using *Half-Life*'s software development package. See: <http://www.firingsquad.com/features/gooseint/> (accessed: 23/10/10) and James Au Wagner, *The Making of Second Life* (New York: Harper Collins, 2008), 35.

the real and the imagined. *Avatar* attempted to open up the experiential space of the constantly repeated media depictions of the 9/11 terrorist attack. I constructed a quasi-narrative sequence aimed at blurring the topographical and timeline parameters of the now iconic images.

Baudrillard has described the immersive pull of the computer screen as being like 'a sort of umbilical relation'⁶³ – a tactile connection through which the viewer can enter the fluid substrate of the image. An historical, factual dimension was inserted into *Avatar* via the virtual, to establish within its gameplay a site for memory, memorialisation and critical reflection on the post-9/11 world. *Avatar* depicted a 9/11 scenario, proposing as 'ground zero' not lower Manhattan, but Sydney, Australia. Its target was the Sydney central business district's Governor Phillip Tower, which houses key financial institutions and government offices.

The exhibition of the project proceeded in possible contravention of Australia's then recently drafted sedition laws and, on legal advice, a disclaimer accompanied the installation stating that the artist did not condone acts of terrorism.⁶⁴ The intention of the project was not to incite an act of terrorism but, using software easily available to the public, to image the unimaginable. During research for the project I discovered that after the fall of Kabul late in 2001, Western journalists reported having come upon editions of Microsoft Flight Simulator in what were known Al Qaeda safe houses.⁶⁵

The installation comprised an aluminium garden shed, wedged between two walls in the gallery, the *Avatar* sequence playing within. The banality of this domestic setting was suggestive of clandestine preparations possibly taking place in some suburban location in Australia. The *Flight Simulator* sequence was viewed on a monitor secured to shelves that carried the computer, audio speakers and a utility box holding the audio components for an external

⁶³ Jean Baudrillard, *The Intelligence of Evil and the Lucidity Pact* (Oxford UK; New York: Berg, 2005), 76.

⁶⁴ The sedition offences are listed in the Australian *Anti-Terrorism Act (No 2) 2005*. Under changes to the law, statements and acts that condone the use of violence against Australians and its institutions could lead to seven years imprisonment. See: <http://122.201.92.45/info-sheets/info-sheet/sedition-law-in-australia/> (accessed: 27/03/11).

⁶⁵ See: http://www.newyorker.com/archive/2001/12/17/011217ta_talk_lemann (accessed: 12/09/10).

loudspeaker. The audio track, sourced from a set of Bible CDs, recounted the biblical story of Jonah – a victim of suspicion and prejudice who was called upon, after his close brush with disaster, to contemplate the imminent destruction of a corrupt city.

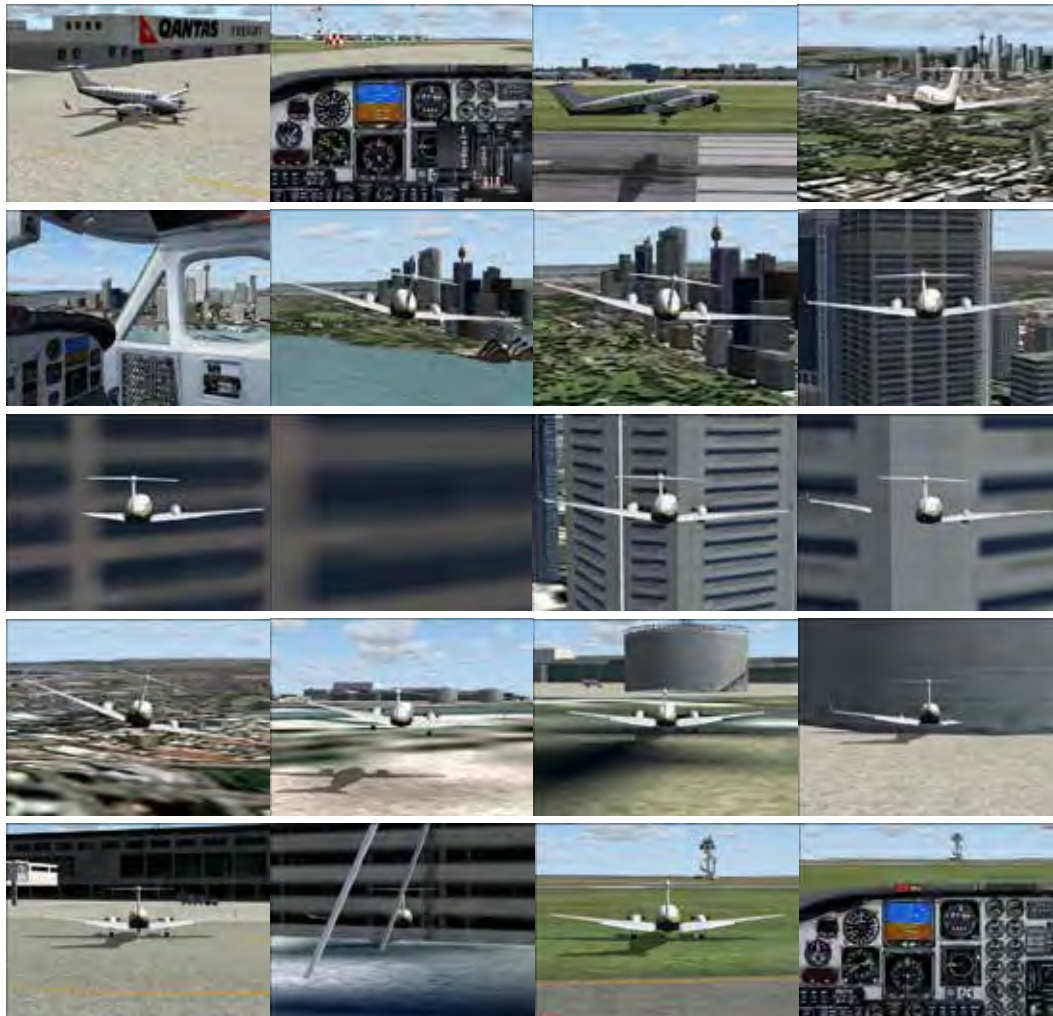
The 12-minute looped graphics sequence commenced with a twin-engine aircraft going through its pre-flight sequence outside a Qantas airfreight building at Sydney's international airport, rendered in accurate detail. Accompanied by realistic air-traffic control exchanges, the plane takes off and flies northwards. A short while after passing the Sydney Harbour Bridge, it turns sharply and the city comes into view from the cockpit. Air-traffic control is heard to request radio contact, but there is no response. The plane gathers speed and, nearing the city's famous Opera House, it becomes apparent that the aircraft has become a projectile and the Governor Phillip Tower is now a target.

Expectations of a cataclysmic event follow. But there is no impact and no explosion; no fireball with showering glass. Instead, dream-like, the aircraft flies straight through the building as if it weren't there, the trajectory taking it through the office blocks behind as well. The city has been spared as if by some miracle. After completing its destructive/non-destructive run, the aircraft heads back towards the airport where it lands, passing unscathed through fuel storage tanks and the airport building itself. Finally, coming to a stop in front of the control tower, the engines and instrumentation panel are shut down. Then the entire sequence starts up again and continues in an infinite loop.

The game's avatar⁶⁶ is never visible. It is defined by what it *does* rather than what it *is* – a vacant identity, available to be filled by anyone so inclined. The simulated camera's point of view alternates between that of the pilot and the witness to the unfolding drama (the viewer). Referring to the use of computer graphic imagery (CGI) in new media art, theorist Lev Manovich writes, 'what is faked is, of course, not reality but photographic reality, reality as seen by the camera lens [...] not our perceptual and bodily experience of reality, but only

⁶⁶ An avatar is a computer user's embodiment of themselves in a computer game.

its photographic image'.⁶⁷ What makes these CG images, or 'synthetic photographs' as Manovich describes them, so compelling is that 'over the course of the last hundred and fifty years, we have come to accept the image of photography and film as reality'.⁶⁸



Avatar video stills

Avatar implied an expanded arena of commonality. In encouraging the establishment of virtual communities, Microsoft offers multiplayer portals⁶⁹ featuring shared air traffic and player flight path data on its *Flight Simulator* website, which allows players to track each other's virtual flights and participate in what the computer game industry terms a 'MUSH' – a 'Multi-

⁶⁷ Lev Manovich, *The Language of New Media* (Cambridge, Massachusetts: Massachusetts Institute of Technology, 2001), 200.

⁶⁸ Ibid.

⁶⁹ See: <http://support.microsoft.com/kb/823630> (accessed: 20/08/2010).

User Shared Hallucination'.⁷⁰ In this context, and in the same manner as Al Qaeda operatives planning their fateful mission using *Flight Simulator*, anyone installing the game on a computer can recreate the fateful flight trajectories. Microsoft was quick to remove the World Trade Centre from the New York topography in editions of the game subsequent to 2001. However, unofficial *Flight Simulator* websites have made open-source software available to reinstate the Trade Centre towers as an add-on to the existing program. This has resulted in numerous online re-enactments of the 9/11 scenario.⁷¹ For participants in this collective imaginary, as pointed out with reference to Hardt and Negri, the interaction between users of the *Flight Simulator* program continues to foster a palpable sense of communion in recalling the 9/11 disaster.

⁷⁰ The MUSH phenomenon will be discussed further in Chapter 3, Section i, *Computer Simulation Games and Online Trading*.

⁷¹ See examples:

<http://www.youtube.com/watch?v=LeRPgYpQjYE&feature=related> (accessed: 04/01/11);

<http://www.youtube.com/watch?v=Ouk0nH1A8iE&feature=related> (accessed: 20/08/10);

<http://www.youtube.com/watch?v=GTQ1kQVpzDo&NR=1&feature=fvwp> (accessed: 04/01/11);

http://www.youtube.com/watch?v=Mmc_KhdUi7g&feature=related (accessed: 04/01/11).

Remote Predictive Viewing, performance, Banff Centre, Alberta, Canada (2008).



The staging point for this project was the Fourth Art of Management & Organization Conference at the Banff Centre in Alberta, Canada. The conference, convened by the Essex Business School at the University of Essex, had as its theme how the visual and performing arts and other non-linear modes of practice might improve business management and organisational techniques. *Remote Predictive Viewing*, which took the form of a business workshop, ostensibly explored common ground between performance art and financial market trading, and compared the aesthetics of business with the business of aesthetics.

The project established, to use Bourriaud's term, a 'micro-community', constituted to attempt the psychic, or precognitive, forecasting of stock movements on the New York Stock Exchange. This endeavour was to occur during a highly volatile period on global markets – the eve of the 2008 commemoration of 9/11. As artist/facilitator, I delivered a series of parapsychological exercises with the intention of identifying individuals within the workshop who appeared to have psychic skills. A further exploration of the group's dynamics, using a technique known as *Remote Predictive Viewing* (RPV), led to consensus on which of a given number of stocks would rise in price, and which would fall on 11 September 2008.

RPV finds its origins in the later Cold War years of the 1970s and the CIA's attempts to tap into the psychic abilities of specially selected individuals.

American physicist Harold E. Puthoff was engaged by the CIA in the 1970s and 80s to investigate the technique and its potential for intelligence gathering.⁷² 'Remote' in this context refers to the attempt to 'see into' developing global events from a distance. Researchers believed that trained operatives could visualise the layouts of far-off military facilities using subliminal association techniques, and even predict significant events such as assassinations and social upheavals, without setting foot on foreign soil. Although the CIA's *RPV* project was terminated at the end of the 1980s, Puthoff's research detailed a number of successful visualisation attempts.

Preparation for the Banff project took place before my departure from Sydney. 60 images of modernist representational and non-representational paintings dating from 1910 through to the 1960s were collected from the New York Museum of Modern Art's online resources. Using a randomised double-blind process, a value was assigned to each image: they were to represent either a rising market (indicated by a green dot placed on the back of the image), or a falling market (indicated by a red dot similarly placed). Using this process, the 60 printed images were marked and sealed in envelopes.

6 targets were then chosen from 30 of the most well-known, high liquidity stocks traded on the NYSE or NASDAQ exchanges. The stocks (*American Express, Caterpillar, DuPont, IBM, Oracle, Walmart*), identified by their logos printed on cards, were each assigned a folder and each randomly accompanied by 10 of the MOMA images. All selections were made using a random number generator and a double-blind process so that neither the participants nor I, acting as facilitator, could know the specific contents of the envelopes and folders in advance.

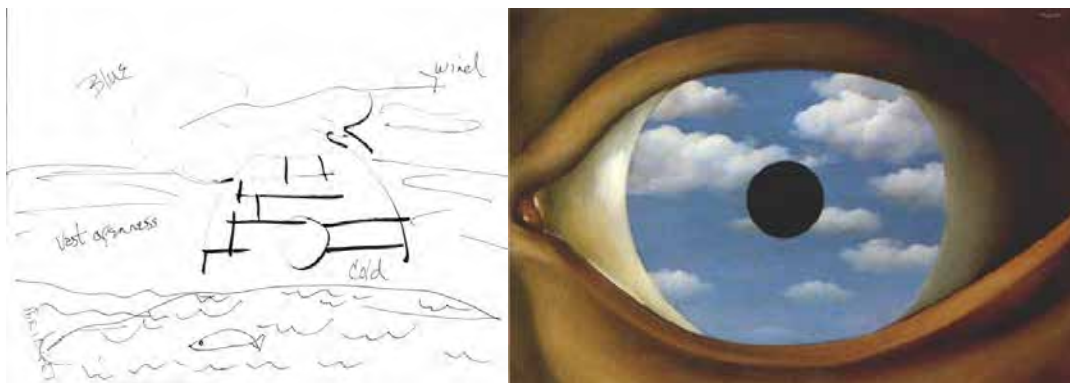
After an introduction to the *RPV* methodology, and a series of warm-up exercises aimed at trying to accurately guess the colours of cards sealed in envelopes, workshop participants were shown the company logos and asked to focus on each of them in turn. They were instructed that should a strong image come to mind in relation to a particular logo, they were to try and draw

⁷² See: H.E. Puthoff, 'CIA-Initiated Remote Viewing Program at Stanford Research Institute', *Journal of Scientific Exploration*, Vol.10, No. 1, 1996, pp. 63-76.

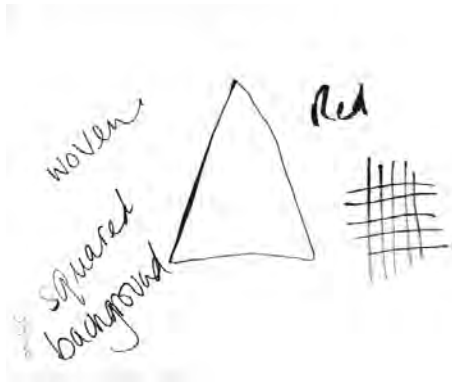
it on the paper provided – with annotations, if needed, for the sake of clarity. Drawings produced by four participants, based on the clarity of their representation, were selected as having potential. It was only then divulged that an attempt would be made to match each sketch with an image of a painting from the MOMA collection, which had been designated by either a green or red sticker as market ‘up’ or market ‘down’, as mentioned above. After each drawing was matched with an image – based on shape, colour, and texture – a market prediction was arrived at for that particular stock. The matching process went smoothly, with clear correlations quickly becoming evident.

With the consensus of the group the following matches and predictions were made:

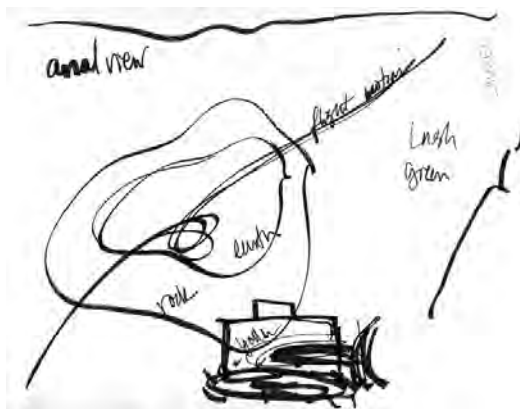
Drawing #1 was matched with René Magritte’s *False Mirror*, which was located in the IBM folder. The image was found to have a green (‘up’) dot. The actual market result on 9/11/08 was that IBM rose by \$1.16, confirming the prediction.



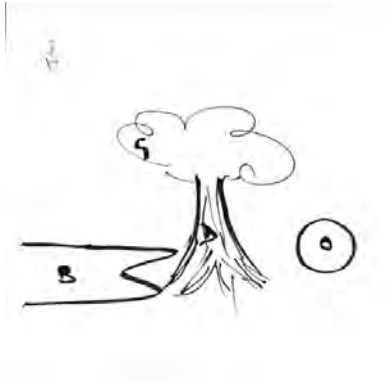
Drawing #2 was matched with Pablo Picasso’s *Studio*, which was located in the DuPont folder. The image was found to have a green (‘up’) dot. The actual market result on 9/11/08 was that DuPont rose by \$1.03, confirming the prediction.



Drawing #3 was matched with Vincent van Gogh's *Starry Night*, which was located in the Walmart folder. The image was found to have a green ('up') dot. The actual market result on 9/11/08 was that Walmart rose by \$1.15, confirming the prediction.



Drawing #4 was matched with Vincent van Gogh's *L'Allée des Alyscamps*, which was located in the Caterpillar folder. The image was found to have a green ('up') dot. The actual market result on 9/11/08: Caterpillar rose by \$2.03, confirming the prediction.



Whether or not the results were a random coincidence, or the product of a bona fide paranormal episode was the subject of intense discussion. The majority of the workshop participants opted for an open verdict. However, the validity of the project lay in its participatory and relational dynamics – not in successfully meeting the workshop’s expectations of a ‘psychic divination’ of the stock market.

La Fuerza del Deseo/La Fuerza de la Necesidad, performance/installation, 10th Bienal de La Habana, Havana, Cuba (2009).



The title, *The Force of Desire/The Force of Necessity*, is derived from a *telenovela* popular in Cuba, *La Fuerza del Deseo*, set in 19th century pre-republican Brazil. The *telenovela* is not just casual entertainment, but a phenomenon in Cuban cultural life whereby those with access to a TV set tune in several evenings a week to an episode of escapist, romantic melodrama. Ironically in the Cuban context, the narrative of *La Fuerza del Deseo* revolves around the romances and intrigues of a wealthy Brazilian coffee baron's family at a time when institutional slavery is coming to an end.⁷³

The *Bienal de La Habana* curators approved my proposal for a work that would deal with the allure of global financial markets, in particular live currency and share trading via the Internet, an activity inconceivable in Cuba. However, it soon became unclear as to whether the exhibition venue would have Internet access.⁷⁴ I decided to become less dependent on available technology, and to shift the focus of the project away from trading, but still reflect the faint glow of capitalism's agency in Cuba.

The reconfigured project was intended to provide the opportunity for *Habaneros* to participate, if only vicariously, in the New York stock market, which represents an economy and locus of desire beyond the means of all but

⁷³ For a full synopsis of the television series see: <http://www.imdb.com/title/tt0087305/> (accessed: 26/06/10).

⁷⁴ In fact, there proved to be a scarcity of many materials in Cuba, which meant that all art supplies, stationery and other materials subsequently used in the project, including installation tools, had to be brought in from Australia.

a few Cubans. I employed two young Havana artists to render aquarelle portraits of the CEOs, and impressions of the logos, of the five hundred companies comprising the Standard and Poors 500 Index. The S&P 500 Index is one of the most commonly used bellwethers for the U.S. stock market which, along with the Dow Jones Industrial index, is said to reflect the overall sentiment of the global economy.

The stocks comprising the index include many of the largest publicly held and highest capitalised companies in the world. They represent a cross section of the goods, services and infrastructure readily available to many developed nations. As a result of the trade embargo imposed on Cuba by the U.S., products of only a handful of these companies, such as Nike and Coca-Cola, can be found in Cuba and then only 'unofficially' through their South American subsidiaries.

Over the duration of the project, from the one thousand printed images I provided, the artists were to produce as many CEO portraits and logos as they could manage. The artists worked in one of the barrel-vaulted rooms in the La Cabaña fortress, the main *Bienal* venue. The use of the space was limited by conservation guidelines and, with its walls covered by a powdery lime-wash and pinning not permitted, attaching paper to this surface with tape soon became impractical. I decided to spread the images over the floor amidst broken up cardboard boxes found on site – as if they had been unloaded and dropped in a great hurry. As each logo or portrait was completed, it was pinned up on one of the temporary boards at the end of the room. The working day began at 10am with the opening of the *Bienal* to the public, and ended with the close at 5pm. Lunch and rest breaks were provided. The productivity logged each day on the wall-mounted scoreboards added a competitive edge to the scenario, with the activities of the artists becoming a daily drawcard for many of the Cubans, mostly art students, working for the *Bienal*. The gallery spectacle instated the artists as minor celebrities and the exhibition space became a locale for social engagement and chitchat between them and their friends. The artists were paid the

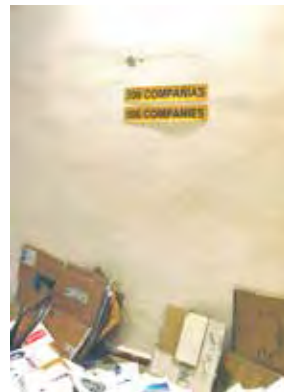
equivalent of the average Cuban monthly wage, around US\$20, for each day of their 30 day contract, with the offer of bonuses if quotas were achieved.⁷⁵

A planned addition to the project had been a series of performances in the city using four thousand new plastic shopping bags, brought with me from Australia. With a shortage of these bags for carrying food and consumables in Cuba, many residents of Havana re-use plastic bags over and over again, washing them and hanging them out to dry alongside their laundry. Together with other such recycled items, plastic bags represent viable exchange commodities on Havana's informal market.

However, the plans for the plastic bag performances I'd entertained before arriving in Cuba seemed entirely inappropriate in the light of the dire economic circumstances I encountered in the city. Instead, over a two-day period the bags were distributed without ceremony in batches of four hundred (worth approximately US\$18, or close to the Cuban average monthly wage⁷⁶) to elderly or in some way incapacitated residents in Old Havana. The willing acceptance of the bags confirmed that they represented to those individuals viable opportunities for participating in the informal economy through resale. I decided that the process of distribution would not be documented.

⁷⁵ The incentive referenced President Raúl Castro's controversial 2009 economic reform aimed at increasing the Cuban workforce's productivity by offering results-based bonuses.

⁷⁶ Plastic bags are sold in Havana for 1 Cuban peso each. 400 bags would fetch 400 Cuban pesos: the equivalent of about US\$18.



Chapter 1: Understanding the Game of Mammon

It is midnight in Sydney, and you are in a room with a view. A room floating twenty-seven levels above the city centre. A room the size of a football pitch with wrap around windows ... Inside this room, however, no one is paying attention to the view. Instead, the seven souls at work at this late hour focus their attention on the green figures that dance across the computer screens. They're all umbilically attached to telephones, and are in consultation with New York, London, Paris, Frankfurt ... there is a quiet, unmistakable air of unease, reminiscent of films you've seen of military officers working late into the night in a command centre, tracking the movements of the enemy on an elaborate array of ultra-sophisticated equipment. There's the same sense of concentrated, witching hour intensity to the tableau. Only here the 'enemy' under scrutiny is the marketplace. For this squad of after-hours foreign exchange dealers knows that their professional survival depends on how they manipulate those numbers ... (these are) the people who play with midnight money.⁷⁷

This passage from Douglas Kennedy's book, *Chasing Mammon: Travels in the Pursuit of Money*, recounts the author's visits to a number of international bourses; from the super-efficient Singapore money market to the exchange in Casablanca where, at the tail end of the 1990s market boom, stock and bond prices were still listed in chalk on blackboards. In the restricted access zone of global dealing rooms, Kennedy's martial analogies serve as an appropriate introduction to introduce this first chapter.

i. Market Mentality

Global financial markets are highly strategised arenas of engagement. Their complex campaigns, consisting of vast numbers of individual transactions, represent a series of stand-offs between buyers and sellers, each manoeuvring to have their orders filled at the desired price. At the end of March 2011, the *Sydney Morning Herald, Business Day* reported a daily turnover for the Australian Stock Exchange, a relatively minor bourse, of over

⁷⁷ Douglas Kennedy, *Chasing Mammon: Travels in the Pursuit of Money* (UK: Time Warner, 1999).

AUD\$8 billion comprising 612,000 individual trades⁷⁸; the New York Stock Exchange on the other hand saw trades totalling US\$86 billion per day by the end of 2007.⁷⁹ The largest financial market of all, foreign exchange (also known as the Forex, FX, or currency market), experiences a global turnover of US\$3.98 trillion per day.⁸⁰ These markets reveal an elaborate choreography: it unfolds daily, minute-by-minute, second-by-second, in rolling sequences of advances and retreats instantly responding to the shifting forces of supply and demand. On any bourse, price fluctuations are driven by a number of factors including local and global political events. However, human responses to these events are the key to understanding the 'Game of Mammon'. Market behaviour is the resulting action of a multitude of personal psychologies – the hopes and fears of investors and speculators trying to predict the future, constantly assessing the wisdom and timing of their trades.

Economic cycles are often characterised as *bullish* or *bearish*⁸¹, and sometimes *flat* if there is no discernible trend. Cycles in their extreme phases are popularised in the media by the terms *boom* accompanied by a market *bubble*, and *bust* followed by the inevitable market *crash*. These terms seem to portray the market as a homogeneous organism with its own discrete determinism. But in fact, they are a simplification of processes that are immensely complex. A broad spectrum of human agency gives form to these cycles. Close observation reveals the martial campaigns of buyers and sellers, constantly evaluating each other's strategies, shifting the balance of the market accordingly. When a critical mass of traders appears to adopt a particular approach either to buying or selling, over an extended period their herd-like actions display discernible patterns. These traces foreshadow potential market trends measured in days, hours – possibly only minutes and seconds. The goal is to seek out a pattern that will reveal the foundations of a

⁷⁸ See: <http://markets.businessday.com.au/apps/mkt/turnover.ac> (accessed: 26/03/10).

⁷⁹ See: <http://www.nyse.com/press/1171278989452.html> (accessed: 15/07/10).

⁸⁰ See: Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in 2010 <http://www.bis.org/publ/rpfx07t.pdf> (accessed: 15/07/10).

⁸¹ A market in which there is an established ascendant trend, and where buying sentiment prevails, is known as a *bull market*. Its counterpart where stocks are consistently sold down is known as a *bear market*.

mother lode: a trade, or series of trades, that will result in maximum gain with minimum risk.

Traders are preoccupied with whether or not the direction of trends can be predicted. A number of trading methodologies have evolved by which patterns and trends can be identified and exploited (these will be addressed in detail in Chapter 4). Other theories suggest that this is impossible to achieve.

Proponents of the *random walk* hypothesis claim that each trade, whether it is to buy or to sell, is an independent event similar to a coin toss with little or no relationship between one outcome and the next. The *efficient market* hypothesis asserts that all information about financial markets is available to all investors and speculators simultaneously, and market moves are simply a reflection of the knowledge and expectations of all involved. Accordingly, it is only possible to *match* the market's performance and impossible to *better* it through taking contrary positions. This latter hypothesis has gained particular favour with academic observers of the market for whom the market represents an efficient 'machine'. The theory is however questionable because it cannot adequately account for anomalous events such as insider trading, where advantage may be taken of information that is not publically accessible. Efficient market theory has also not been able to explain sustained periods of buying or selling that are beyond logic or rationale. This kind of market activity creates unrealistically high or low prices. These extreme fluctuations are usually caused by speculators' perceptions that buying, and hence the escalation of stock prices, can be sustained indefinitely. These scenarios most often terminate in panic driven sell-offs as the 'irrational exuberance' fades.

There are analysts who favour neither the 'random walk' nor the 'efficient market' theories, believing that the market displays similar tendencies at certain times and under specific conditions. Periods of high volume buying or selling often result in the market responding in predictable ways as it ebbs and flows in a state of dynamic balance between stability and instability.

Appropriate trading strategies can take advantage of these repeating patterns.

The analysis of these fluctuations is a highly specialised practice. There are two main types of interpretation: *Fundamental analysis* primarily considers

factors such as the state of the general economy, interest rates, and companies' financial statements detailing production and earnings statistics. *Technical analysis* largely ignores the fundamentals, concentrating instead on the actual volume of trades and the movement of prices displayed by various graphic indicators such as *bar* and *candlestick* charts, which display the opening, high, low and closing price of a stock, currency or commodity. These charts can be supplemented with the probability algorithms embedded in moving average lines and stochastic indicators, for example. Charts are used to analyse and interpret trading data: the tracks left by multitudes of speculators and investors over specific periods of time. The *Candlestick Method*, which will be discussed in detail in Chapter 4, has its origins as far back as 17th century Japan, where commodity traders developed a graphic system of representing rice futures prices. In global trading practices, the candlestick chart is now commonly used for gaining insight into price movements over different time frames, from the shortest (measured in seconds, minutes or hours) to the longest (measured in weeks or months).

Technical analysts, sometimes known as 'chartists', search for the recurrence of buying and selling patterns. They might not actually trade themselves, but are in the business of supplying information about probability and risk. The deep analysis of charts, which might include the application of complex Fibonacci series, for example, can appear to be an arcane study, and more a subjective response to the markets than it is a science. Technical analysis at varying levels of complexity has, however, become common practice at every level of financial market trading.

ii. From Specie to Virtual Money

a. Gold

In feudal societies, production manifested as items or goods that bore a direct relation to the lives of those who had produced them. The local remained localised – 'inextricable from the social context of its making'⁸², as philosopher

⁸² Brian Rotman, *Signifying Nothing; the Semiotics of Zero* (Houndmills; Basingstoke; Hampshire: Macmillan Publishing, 1987), 23.

Brian Rotman puts it. Rotman uses the Marxist definition that defines surplus as that produced over and above what is necessary for workers' daily material needs. This excess manifested as accumulation in terms of the feudal lord's visible wealth, and did not flow back to workers. However, in the transition to mercantile capitalism – from feudal use-values to capitalist exchange-values – surplus production manifested as commodities that were traded within an exchange-value matrix. Formal exchange transactions typified this process, and the notion of value became abstracted as it detached from the social locus of bartered objects. The evolving medium replacing barter – the legal tender of this exchange-value relationship – evolved into what we know as money and the transactions between participants became known as buying and selling.

In addition to other forms of specie, such as metal coins and tokens, currency in the form of gold coin appeared in Europe in the late Middle Ages and was used as a stable medium of exchange substantiated by the value attributed to the metal itself, that is, its commodity value. It was thus ideally suited to establishing a fiduciary standard, as discussed in the previous section, by which a pricing or value system could be established.

Throughout the most tumultuous periods in world history (and mythology) gold has been regarded as a refuge or hedge against the vagaries of socio-political and economic instability. Too malleable to be of primarily utilitarian use, but pure and relatively scarce, the metal became a symbol of power, authority, and consistent and dependable worth.

Michel Foucault writing in *The Order of Things: An Archaeology of The Human Sciences*, refers to the material substance of the first gold currency as intrinsic to its face value.

... the metal appeared only as a sign, and as a sign for measuring wealth, in so far as it was itself wealth. It possessed the power to signify because it was itself a real mark. And just as words had the same reality as what they said, just as the marks of living beings were inscribed upon their bodies in the manner of visible and positive marks, similarly, the signs that indicated wealth and

measured it were bound to carry the real mark in themselves. In order to represent prices, they themselves had to be precious. They had to be rare, useful, desirable. Moreover, all these qualities had to be stable if the mark they imprinted on things was to be an authentic and universally legible signature.⁸³

The Bullion Committee reporting to the English Parliament in 1810 strongly recommended the first formal elevation of gold to represent a standard by which all foreign economic exchanges could be measured, stating that: 'Gold is itself the measure of all exchangeable value, the scale of which all money processes are referred [...] Bullion is the true regulator both of the value of a local currency and the rate of the Foreign Exchange.'⁸⁴ From the 19th century the *gold bullion standard* came to represent a criterion to which international currencies could be linked and converted at fixed rates, thus establishing a common bond between their relative values. Commenting on gold's symbolic worth over its *prima facie* utility, financial historian Peter Bernstein observes in his comprehensive history of the precious metal that, 'the most effective forms of money have developed from objects that were otherwise quite useless, such as paper and computer blips'.⁸⁵ In Bernstein's view the conflation of 'primitive' trust in an essentially useless metal with a sophisticated system for determining value is not dissimilar to the current belief in the monetary value represented by digital data.⁸⁶

The massive expansion in international economic activity that developed in the 19th century was concomitant with the adoption of the gold standard by developed nations. Gold was regarded as a regulatory influence in a country's balance of trade and its inward and outward flows of capital. The stability of banks began to be measured in terms of their accessibility to gold as a liquid or immediate asset. The values of instruments of foreign exchange such as bank and promissory notes, Bernstein informs us, were measured in terms of

⁸³ Michel Foucault, *The Order of Things: An Archaeology of The Human Sciences* (New York: Vintage Books, 1973), 169.

⁸⁴ Peter L. Bernstein, *The Power of Gold: The History of an Obsession* (New York: John Wiley & Sons, 2000), 244.

⁸⁵ *Ibid.*, 19.

⁸⁶ *Ibid.*

their convertibility into gold, and 'currencies were just names for particular weights of gold'.⁸⁷

However, WWI disrupted the stable structures and international economic co-operation facilitated by the gold standard. In the years following, developed countries riding the maelstrom of the Great Depression attempted to protect their national interests by turning inward and instituting tariff barriers that imposed hefty taxes on various categories of imported goods. The process resulted in the dissolution of the gold standard and its balancing effects. By the end of WWII, international market exchange had been significantly restricted and the movement of capital and goods across the borders of developed nations highly regulated.

In an attempt to ease these limitations on economic growth, a concerted effort by the Allies to remove the volatility from the global monetary exchange resulted in the 1944 Bretton Woods Agreement. Named after the American town in New Hampshire where representatives of 44 participating nations met, the accord aimed to stabilise exchange rates by fixing them, but allowing for a degree of domestic economic policy freedom to stimulate production and thus maintain employment growth. While international trade in goods was to be encouraged through the relaxation of tariff barriers, capital exchange (foreign currency) markets were to be carefully monitored to maintain stability.

According to the Bretton Woods Agreement, two international agencies would provide this monitoring and oversight of capital markets: the International Monetary Fund (IMF), which was to provide short term assistance to countries experiencing problems settling their economic obligations with other countries (known as 'balance-of-payments'), and the International Bank for Reconstruction and Development (what was to become known as the World Bank), which encouraged development projects in countries by providing long term financial support.

The desire to return to and maintain the gold standard was reintroduced by the Bretton Woods Accord, enshrining the United States as a major economic

⁸⁷ Ibid., 243.

and political power by pegging the value of one ounce of gold at US\$35. Other countries came under pressure to re-establish links to the calming influence of the gold standard by valuing their currencies against the dollar. The United States was thus established as the lynch pin of this system, holding 75 percent of the world's stock of gold, and with its factories and production lines having suffered no war damage, the postwar American economy surged.

The Bretton Woods Accord was adopted by most developed nations from its inception to the end of the 1960s, and foreshadowed an unprecedented period in the growth of capitalism and economic development in participating countries.⁸⁸

However, inflation was the inevitable flow-on effect of this progress, and as economic instability loomed once again, a breakdown in the control of international capital movements occurred. Although trading in financial instruments was globally denominated in U.S. dollars, in Europe – outside of the control of the United States – there was vulnerability to the kind of speculation that takes advantage of price differentials between currencies, a trading strategy known as arbitrage. Once again the seeding grounds of deregulated financial markets had been planted.

By 1971, exacerbated by America having become mired down in the Vietnam War, it was becoming clear that the U.S.-dominated Bretton Woods regulatory system could not take into account anomalies in global economics, such as the need by some economies to cyclically appreciate or depreciate the value of their currencies (in response to trade deficits, for example). The necessity to take into account such variances eventually resulted in gold's convertibility falling out of favour amongst developed nations. The weakening of adherence to the gold standard and its centralised surveillance marked the appearance of floating exchange rates and a resurgence in capital market speculation. By 1973, the Bretton Woods system of fixed exchange rates tied to the U.S. dollar had progressively been dismantled. As Bretton Woods came unstuck,

⁸⁸ Christopher Shiel, *Globalism: Australian Impacts* (Sydney: UNSW Press, 2001), 23.

the price of gold began to climb, and the lure of the metal as a safe haven for wealth and a hedge against inflation increased dramatically. With US\$35 an ounce a distant memory, gold on the London market in 1972 rose from \$46 an ounce to \$64 by year's end.

Oil is the other globally strategic commodity, and political pressure on the West mounted as the Organization of Oil Exporting Countries (OPEC) increased oil prices during the Middle East crisis of 1973. During that year gold's \$100 barrier was broken. From 1974 to 1977, gold fluctuated between \$130 and \$180 an ounce. Bernstein cites another major oil price hike in 1978 as being the catalyst in a frenzied climb in the gold price to \$244, before doubling in price within a year to \$500 an ounce in 1979. Further instability in the Middle East and Europe saw the gold price hit a peak at \$850 an ounce in 1980.⁸⁹

The volatile prices paid for the metal clearly indicated that gold no longer held the key to economic stability. As Bernstein describes it, gold had been 'dispossessed of its power over the world of money [...] emasculated. Now greed and power and lust for power run down different channels.'⁹⁰ At the turn of the millennium that world of money still revolved around the United States dollar and the economy of that country. In the wake of the outmoded Bretton Woods system a breed of money managers who had gathered their skills through the booms and busts of the 1980s and 1990s became embedded in America's Federal Reserve System. Their job became to regulate and control the fast growing hydra-headed global financial market and its complex financial instruments, which had begun to provide greater speculative opportunities and a more efficient hedge against inflation, than did the precious metal. In 1999, a dollar backed by Alan Greenspan, Chairman of the U.S. Federal Reserve Board, was referred to by one journalist as having more authority than one backed by gold.⁹¹

⁸⁹ Bernstein op. cit., 355.

⁹⁰ Ibid., 368.

⁹¹ Floyd Norris, 'Who Needs Gold When We Have Greenspan', the *New York Times*, 14 May 1999. See: <http://query.nytimes.com/gst/fullpage.html?res=9B0CE4D6143CF937A35756C0A96F958260> (accessed: 25/06/10).

The economic world's 'primitive' trust in the value of a 'useless' metal, as described by Bernstein, was now ready to be eclipsed by a trust in the value of blips on a computer screen⁹²: the information standard would soon come to replace the gold standard as the foundation of global finance.

b. The Evolution of Virtual Money

With the abandoning of the U.S. dollar's convertibility into gold, a new financial era followed. The effect on fluctuations in the dollar and other global currencies promoted speculative interest in the idea of money as a commodity in itself that could be bought and sold even though its intrinsic material worth was non-existent. The value of this money, or currency, depended entirely upon its agreed market value. Foucault had written *The Order of Things* in 1970, shortly before the abandoning of the U.S. dollar's convertibility and the establishment of a global money market based on the relative values of floating currencies. He had asserted that:

The two functions of money, as a common measure between commodities and as a substitute for the mechanism of exchange, are based upon its material reality that can be compared to the diversity of things that one wishes to measure [...] money does not truly measure unless its unit is a reality that really exists, to which any commodity whatever may be referred.⁹³

Some three years later however, the 'material reality' to which he referred became *virtual* and the sign, the index of value, was all that remained of money as a notional constant.

In describing the transformation of the 'real mark' of money in the relative value system of post-1973 global economics, Rotman describes a dollar bill presented to the U.S. Treasury as that which entitled the holder to an 'identical replacement of itself'.⁹⁴ Rotman refers to this abstraction of money's

⁹² At the time of writing in late 2009, gold had surged above \$1000. Gold does not play the pivotal role in global fiscal and monetary policy that it used to. However, the metal still functions as a bellwether of value in a time of fluctuating global economic sentiments.

⁹³ Foucault op. cit. 169.

⁹⁴ Rotman op. cit. 89.

See also: Wechsler op. cit.

Wechsler writes in *Boggs: a Comedy of Values* about American artist J.S.G. Boggs (Steve Litzner) who has established a career rendering drawings of the U.S. dollar and other currency notes (usually the

value into sign as *xenomoney*, from *xeno*, the Greek word for 'stranger'. The dollar and its relative value, as well as that of other major world currencies, now circulates as *xenomoney*, freely traded in the cyberspace of international capital markets. By signifying itself, this virtual currency can be traded not only in terms of its current value (known as the 'spot rate' in capital markets), but also in terms of its *future* value determined by market forces (known as its 'forward rate'). In order to be accommodated within a present and a future matrix, the currency needs to be bought and sold in a market in which *time* is included in the equation and functions as a coordinate relative to value.

The drift of money from specie to a time-weighted consideration necessitated the development of appropriate financial instruments to enable specialised capital market trade. In 1972, the Chicago Mercantile Exchange began issuing financial derivatives contracts for currencies known as 'futures' and 'options'.⁹⁵ These types of contracts were not entirely inventions of the 20th century, however. They were in evidence as practical market instruments well before this, most notably in the futures trading of rice in 18th century Japan, and tulip bulbs in 17th century Holland, whereby the price for the delivery of the commodity at a future date could be agreed upon.

Financial derivatives do not have any intrinsic value themselves and in their intended form are applied in the financial industry to manage risk and neutralise, as far as possible, future uncertainty. Essentially, they comprise an agreement between two parties regarding price movement – a *falling* as well as a *rising* price – of a share, currency, or commodity without either party having to own the underlying asset or entity. For example, a farmer might use a futures contract to insure or hedge against a failed harvest. In this scenario

face), and exchanging them for an equivalent value in goods and services in the community. Boggs enjoys notoriety and is celebrated not only amongst aficionados of his art, but also in legal circles, having set precedents when attempts by currency authorities in the U.S., U.K. and Australia to prosecute him during the 1980s failed. Boggs' 'currency' is however significantly different from standard currency notes in circulation in that his drawings, held by collectors, substantially appreciate in value.

⁹⁵ Daniel Ben Ami, *Cowardly Capitalism: the Myth of the Global Financial Casino* (New York: John Wiley and Sons, 2001), 91ff.

the contract might bet on the standard wheat price falling.⁹⁶ This strategy would compensate the farmer if their harvest were not to make the grade.

The leveraging and two-way capability offered by derivatives has also become a tool that offers a speculator the opportunity of maximizing a modest initial capital investment, and to bet on both a falling and a rising market. In the above example it might be a speculator, and not a farmer, who bets on the possibility of a rising or falling wheat price. As the worth of the contract depends on when it is valued along its specified trajectory, its significance lies in how the contract holder's relationship-in-time with that contract has been constructed.

Since the 1970s the exponential growth in the derivatives industry has led to the regular development of exotic financial instruments in response to changing risk environments. These include, for example, interest rate and credit derivatives. In 2006, responding to the Bush Administration's advocacy of home ownership, and with the enticement of low interest rates, low-income wage earners flocked to buy real estate. However by the following year, as interest rates increased and the U.S. property market dipped substantially, the amount of mortgage defaults increased creating an unprecedented debt crisis. The subsequent global financial crisis (GFC) was precipitated by the collapse of a large number of financial institutions in the United States that dealt in 'sub-prime' mortgages established for low-income (in other words, high-risk) borrowers. U.S. Government-backed financial institutions, the Federal National Mortgage Association (a.k.a. Fannie Mae), and the Federal Home Loan Mortgage Corporation (a.k.a. Freddie Mac), were engaged in buying and selling mortgage debt that facilitated the maintenance of liquidity for investment and commercial banks in a complex web of transactions that depended on the stability of the housing market for their success. With the collapse of the housing market, the number of borrowing defaults rose disproportionately to the projected trajectory of the sub-prime debt derivatives. The result was a credit squeeze in which many major banks such as Lehman

⁹⁶ In betting on a rising wheat price a financial derivative known as a 'call option' would be applied. In the opposite scenario, betting on a falling market price, a 'put option' would be the appropriate strategy.

Brothers and Bear Stearns, unable to cope with the sudden necessity to liquidate capital bound up in convoluted levels of investment, went to the wall.⁹⁷ It became apparent that what used to constitute the primary foundation of an economy – trade in goods – had been overtaken by capitalism's meta-sign.

The current global financial crisis has demonstrated how the importance of trade flows has been superseded by speculation on the underlying volatility of foreign exchange and derivatives transactions. The markets are now driven by capital rather than trade flows, as Rotman points out: 'present-day traded financial futures/options [are] the means through which money – *xenomoney* – establishes itself as sign able to signify its own future'.⁹⁸

Jean Baudrillard, in his influential essay 'The Precession of Simulacra', refers to a Jorge Louis Borges tale of an empire where the craft of cartography had attained such exactitude that the map of that empire evolved to the same scale as the empire itself, coinciding with it point for point. Eventually, of course, the map became unmanageable to an absurd degree.

Borges writes: 'Less attentive to the study of Cartography, succeeding Generations came to judge a map of such Magnitude cumbersome, and, not without Irreverence, they abandoned it to the Rigours of sun and Rain. In the western Deserts, tattered fragments of the Map are still to be found, Sheltering an occasional Beast to beggar.'⁹⁹

In his essay, Baudrillard inverts the fable as an illustration of the post-modern condition, and suggests that it is the *map* that has survived and the *empire* that has crumbled. The map or abstraction now precedes the territory representing, as he puts it, the 'real without origin or reality'.¹⁰⁰

⁹⁷ For a detailed account of the underlying causes of the U.S. sub-prime mortgage crisis, refer to Gary B. Gorton, *Slapped by the Invisible Hand: the panic of 2007* (Oxford: Oxford University Press, 2010).

⁹⁸ Rotman op. cit., 93.

⁹⁹ Borges short tale was titled *On Exactitude in Science*. See: Jorge Luis Borges, *Collected Fictions*, trans. Andrew Hurley (New York: Penguin, 1999).

¹⁰⁰ Jean Baudrillard, 'The Precession of Simulacra', in *Art After Modernism: Rethinking Representation*, ed. Brian Wallis (New York: The New Museum of Contemporary Art, 1984), 253. Originally published in *Simulations*, trans. Paul Foss and Paul Patton (New York: Semiotext(e), 1983).

In the context of this thesis, Baudrillard's conjecture can be used to aptly describe the abstraction of value in the context of the present-day global financial crisis. In this scenario, it is the seriously undermined global economy that is crumbling. The map which survives is the fugitive matrix of relative values that proliferates in what has appropriately become known as the 'shadow banking system'.¹⁰¹

The development of highly complex financial derivatives, esoteric even to many economists, has been facilitated by the progressive deregulation of financial markets. Marx, in the *Communist Manifesto*, presaged the process of distilling *value* to its degree zero of abstraction:

The bourgeoisie cannot exist without constantly revolutionizing the instruments of production, and thereby the relations of production, and with them the whole relations of society. Conservation of the old modes of production in unaltered form was, on the contrary, the first condition of existence for all earlier industrial classes. Constant revolutionizing of production, uninterrupted disturbance of all social conditions, everlasting uncertainty and agitation distinguish the bourgeois epoch from all earlier ones. All fixed, fast frozen relations, with their train of ancient and venerable prejudices and opinions, are swept away, all new-formed ones become antiquated before they can ossify. All that is solid melts into air.¹⁰²

iii. Technology, Capital Flows and the 'Ultimate' Market

Innovations in digital technology, particularly the development of online trading software, have provided for unprecedented global participation in financial markets. In sociologist Saskia Sassen's view, this accessibility has given rise to a close approximation of the neoclassical idea of a market governed entirely by supply and demand.¹⁰³ This notion is closely allied to the efficient market hypothesis mentioned above. Millions of online investors and

¹⁰¹ Shadow banking refers to the system in which specialised non-depository banks lend money to investment banks, often for purposes of speculation on derivatives markets.

¹⁰² Karl Marx, Friedrich Engels, 'Bourgeois and Proletarians', Chapter 1, *The Communist Manifesto*, 1848, <http://www.marxists.org/archive/marx/works/1848/communist-manifesto/ch01.htm#007> (accessed: 14/07/10).

¹⁰³ Saskia Sassen, 'The Embedding of Electronic Markets: The Case of Global Capital Markets' in *The Sociology of Financial Markets*, ed. Karin Knorr-Cetina and Alexander Preda (Oxford: Oxford University Press, 2005), 17.

speculators now theoretically have equal access to economic data and the mechanisms of the market through electronic trading and online information networks. According to Sassen, institutional *and* public traders alike are thus able to rationally determine the potential risks and optimum rewards of their investments, a process characteristic of an 'efficient' market in which all relevant information is readily available.

As no actual ownership of shares, currencies or commodities is a prerequisite of the contemporary electronic market, the outcomes of the buying and selling process have dematerialized rendering the relationship between supply and demand more fluid. With market deregulation having significantly opened up participation in the globally integrated capital market industry, as already discussed, currencies are no longer valued against gold, nor the U.S. dollar for that matter. As developed economies embrace a free-market ideology and scaled-back government regulation, highly speculative exchange between buyers and sellers has become characteristic of contemporary markets.

In her essay, *The Embedding of Electronic Markets: The Case of Global Capital Markets*, Sassen heralds these developments as constituting the 'ultimate market'.¹⁰⁴ In Sassen's view:

This is as close an approximation to the model of supply and demand one might hope for: a market that is not encumbered by geography, weight, unequal access to information, government regulation, or particularist agendas given its highly technical character and the participation of millions of investors.¹⁰⁵

The electronic market comprises what Sassen refers to as 'a complex architecture of transactions'¹⁰⁶, characterised by interconnectivity, simultaneity, and decentralised access wherein supply and demand are based not on money flows, but on transactions themselves. According to Sassen, a productive cycle is thus stimulated: ease of engagement encourages participation by active investors/speculators, which increases the number of transactions. This is in turn beneficial to the market by raising the

¹⁰⁴ Ibid., 18.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid., 19.

level of liquidity – or money circulating in the market – providing the stimulus and momentum to drive prices.

According to Sassen, one of the most significant outcomes of increased market activity has been that the total value of financial assets in play in the currency, bond and equity markets far exceeds the gross domestic product (at the time of her writing in 2005) of the twenty-three highly developed nations that form the Organisation for Economic Cooperation and Development (OECD).

She provides the following example: 'The aggregate GDP stood at US\$30 trillion in 2000, while the worldwide value of internationally traded derivatives reached over US\$65 trillion in the late 1990s, a figure that rose to over US\$80 trillion by late 2001, US\$192 trillion in 2002'.¹⁰⁷

As mentioned previously, the foreign exchange (FX) market was the first to fully globalize in the mid 1970s. Sassen cites the FX market as having grown from a daily turnover rate in the region of US\$15 billion in the 1970s, to US\$60 billion in the early 1980s, to an estimated US\$1.3 trillion in 2005.¹⁰⁸

Sassen's essay does not address the economic and social impact of the burgeoning activity on capital markets. Neither does it discuss how this speculative focus has shifted emphasis away from investment in markets that encourage production, manufacture and services. The effects of under-regulated markets were to become apparent just three years after publication of her essay with the cascading effects of the subprime mortgage crisis. The value of Sassen's research lies rather in its focus on the relationship between technology and flows of capital, where information technologies have resulted in the hyper-mobilization of money.

In the current economic context Sassen's 'ultimate market' begs closer scrutiny, and will be discussed further with regard to the efficient market hypothesis in the following chapter. Considering the 2008 (and progressing)

¹⁰⁷ Ibid., 20.

¹⁰⁸ Ibid., 34.

This estimate is pre-GFC. The 2010 Bank for International Settlements Triennial Survey upgrades this estimate to almost US\$4 trillion. See: <http://www.bis.org/publ/rpfx10.htm> (accessed: 27/09/10).

global financial crisis that was arguably a by-product of excessive and pervasive deregulation, the 'ultimate market' might in fact be closer in analogy to a disastrous 'perfect storm'.

Chapter 2: Democratising Capital and Culture

i. The Speculator as a Cultural Figure

Rising to either celebrated or infamous status from amidst the legions of fortune hunters plying the treacherous waters between risk and reward, capitalism's alpha-speculators have always stirred the imaginations of average investors. The major players in the 'Game of Mammon' have made and lost almost unimaginable fortunes on the basis of inspired analysis, hunches, and desperate gambles. They have included George Soros, latter day philanthropist and self-styled philosopher, who was reputed to have made a billion dollars by betting against (short-selling) the British pound during the 1992 U.K. currency crisis; and Nick Leeson, whose unauthorized, or 'rogue', speculations between 1992 and 1994 while Chief Trader of Barings Bank brought the institution to its knees after accumulating hidden losses of over US\$1.4 billion.¹⁰⁹

Financial historian Edward Chancellor writing in *Devil take the Hindmost: A History of Financial Speculation*, cites two early definitions of the figure of the speculator by pioneers of economic theory, Adam Smith (1723-1790) and John Maynard Keynes (1883-1946). Smith, who determined the economy to be the 'dominant institution of modern societies'¹¹⁰, identified a speculator as an individual who is ready 'to pursue short-term opportunities for profit: his investments are fluid whereas those of the conventional businessman are more or less fixed'.¹¹¹ Keynes made a distinction between speculation and enterprise. In Keynes' view, enterprise is concerned with forecasting 'the yield of assets over their whole life' whereas, in contrast, speculation focuses on 'forecasting the psychology of the market'.¹¹² In this scenario, forecasting the psychology of the market forms the basis of attempts to profit from fluctuations in market price by tracking and exploiting the herd-like behaviour

¹⁰⁹ See: George Soros, with Byron Wien and Krisztina Koenen, *Soros on Soros* (New York: J. Wiley, 1996), and: Nicholas Leeson, with Edward Whitley, *Rogue Trader* (London: Little, Brown and Company, 1996).

¹¹⁰ Keith Hart, Chris Hann, *Market and Society: The Great Transformation Today* (Cambridge: Cambridge University Press, 2009), 1.

¹¹¹ Edward Chancellor, *Devil Take the Hindmost: A History of Financial Speculation* (New York: Farrar, Strauss, Giroux, 1999), xi.

¹¹² Ibid.

of traders, where rumour, insider knowledge or even mass hysteria will precipitate a stock being bought up or sold off.

Sociologist Alexander Preda describes the speculator as a cultural figure that came into its own in the latter half of the 18th century, emerging from the bastions of capitalism being formed in Amsterdam, London and Paris.¹¹³ The lack of positive social impact perceived as resulting from market speculation drew moral and political criticism, with many regarding the activity as merely another form of gambling. In terms of its civic value, speculation came under suspicion as being economically, politically and socially *non-productive*. Indeed, the architects of the 1789 revolution in France called for the death penalty for any form of financial dealing that might be exploitative of the social contract. The revolutionary figurehead, the Comte de Mirabeau, declared that speculation 'is a deadly science, a most obscure and deluding game'. Preda cites Mirabeau's distaste of financial speculation as:

... 'scandalous mechanick' which has no reality in itself; it is bewitching, deadly, a perverted art which commutes people out of their senses [...] working against the public interest, dishonest, in a state of drunkenness and exaltation. Stock trading is traffic by deception and cunning and a pernicious commerce.¹¹⁴

Preda tempers this pejorative historical view by citing Chancellor who argues that 'the culture of financial investments in the 18th century was carnival-like, characterized by popular participation coupled with a Utopian yearning for freedom and economic equality'.¹¹⁵

In the mid-19th century, speculation received attention from an unexpected quarter. French politician, philosopher, socialist and self-avowed proto-anarchist Pierre-Joseph Proudhon – in a statement seemingly paradoxical to his dictum 'Property is Theft'¹¹⁶ – declared speculation as 'a creative social force (along with industry and trade), as an intrinsic feature of human nature

¹¹³ Alexander Preda, 'The Investor as a Cultural Figure', in *The Sociology of Financial Markets*, ed. Karin Knorr-Cetina and Alexander Preda (Oxford: Oxford University Press, 2005), 149.

¹¹⁴ Ibid., 150.

¹¹⁵ Ibid., 149.

¹¹⁶ See: Pierre-Joseph Proudhon, *What is Property? An enquiry into the principle of right and of government*, trans. Benjamin R. Tucker (London: William Reeves, 1969).

as an expression of human freedom; all human beings are endowed with this force and must therefore exercise it'.¹¹⁷ According to this view, even the working class should have the right to speculate and enjoy unfettered access to the otherwise exclusive domain of stockbrokers.

Proudhon regarded speculation and free access to the markets as a social leveller, conjuring an idealised market that would finally achieve social equality. According to Preda, he saw the working classes' participation in joint stock companies with the bourgeoisie as assisting in their upliftment.

Proudhon declared:

In fifty years all national capital will be mobilized, all production values will be engaged to a social aim; the field of individual ownership will be reduced to the objects of consumption [...] Will the salary man, this old slave, excluded since the origins of the world from ownership, be still excluded from society until the end of the world? In fifty years from now, work will have the weight of capital, and the former will write off the latter, and this will come true.¹¹⁸

During the same period, French economic theorist E. Guillard supported speculation as a means to maintain the liquidity of the market, writing in *The Operations of the Stock Exchange (Les Operations de Bourse)* in 1875:

Above all, it is stagnation that we dread in the financial market, since with stagnation business is paralysed and values vanish. Speculation, to the contrary, by its sudden movements, its vain alarms, its failed illusions, its unexpected chances, its alternatives of high and low, keeps financial activity going and attracts on the stock exchange capitals which otherwise would be idle. Not only that speculation prevents markets from being invaded by apathy, but it also helps avoid the dangers of too high differences which menace from time to time public fortune; because, in the time of foolish trust, speculation coldly calculates tomorrow's deceptions and multiplies its sales; in moments of blind panic, speculation foresees the return to trust and doubles its acquisitions.¹¹⁹

¹¹⁷ Preda op. cit., 155.

¹¹⁸ Ibid., 156.

¹¹⁹ Cited in Preda, ibid., 155.

The post-revolutionary period in France abounded with descriptions of the market as a 'living organism'. In 1863 Jules Regnault in *The Calculation of Chance, and the Philosophy of the Bourse* (*Calcul des chance et philosophie de la Bourse*) wrote, 'In our era, so material and progressive, everything must converge toward the stock exchange. It is the heart, which in a great body receives life and diffuses it throughout all the limbs'.¹²⁰ Market analysts of the time were intrigued by the identifiable, repeating patterns that could be overlaid on the rises and falls of stock prices. These patterns seemed to suggest that prices were not determined entirely by the whims and emotions of investors, and that the market might behave in ways that could be diagnosed in a scientific manner.

Regnault's study, which laid the foundations of the 'random walk' theory, and the development of mathematical finance, suggested that 'speculation should follow the example of physics and discover the objective laws which govern the market. True speculation must examine and know the constant laws of stock price variations; these laws are as universal as the gravitational laws'.¹²¹ The scientific analysis of markets proposed an objective methodology to govern speculation, distancing it from unbridled gambling. Preda differentiates between gambling and what he refers to as 'true speculation'. He asserts that 'false speculation or gambling is led by excess, emotions and lack of study. True speculation is grounded in observation and study, conducted according to rules, useful and honest'.¹²²

In Preda's view, following Proudhon, the speculator is a key figure and positive force in capitalism, embodying the right to own shares in public companies, to trade them and beyond simple ownership, to participate in the essentially democratic structure of the market. Preda asserts, 'we hold and trade securities not only because it is economically profitable [...] but also because it is socially and morally justified, because we accept this arrangement as legitimate'.¹²³ He claims a cultural role for the speculator

¹²⁰ Ibid., 156.

¹²¹ Ibid., 152.

¹²² Ibid., 155.

¹²³ Ibid., 148.

where ‘investing is intrinsic to human nature and a basic social right’ and, allied to contemporary systems analysis, that the speculator is a ‘social actor’ who has been transformed into ‘a scientist bound to discover the universal laws of the markets’.¹²⁴

Preda points out that progress towards an objective language of analysis did not presuppose the disappearance of deal making, market manipulation, or emotions. However, this newly evolving language did allow the speculator to look behind the volatility and fluctuations of market prices, and to discern emerging patterns. In applying such analysis Preda suggests, ‘emotions do not disappear but become manageable. They are not seen as determining decisions, but as instruments in building up a personal relationship with the market.’¹²⁵ Such early attempts at objective market analysis developed into today’s science of technical analysis, and will be discussed in Chapter 4, *Reading the Signs*.

ii. Booms and Busts

With the Bretton Woods Agreement having fallen out of favour by 1972, ‘money became only a figment of the imagination, weightless and ethereal’.¹²⁶ The fluctuations in currencies’ values resulting from their floating independent of the U.S. dollar were grist to the mill for speculators. In a sense speculators became the arbiters of currency markets, stimulating, and in some cases manipulating, supply and demand. A currency’s *perceived* future value had a strong influence on its present worth.

The 1970s saw a challenge to the Keynesian dictum that economic development should be subject to comprehensive and sustained regulation. The challenge was spearheaded by an economics professor at the University of Chicago, Milton Friedman. His influential thinking led a return to the economic liberalism of the 19th century, which promoted unbridled capitalism, free trade and competition, and opposition to government intervention in the markets. Friedman’s ‘Chicago School’ of economics had a profound effect on

¹²⁴ Ibid., 141.

¹²⁵ Ibid., 155.

¹²⁶ Chancellor op. cit., 237.

Western economic theory through the booms and busts of the 1980s to the present, and paved the way for the rise of the contemporary figure of the speculator.

During Friedman's heyday, economists also originating from the University of Chicago (School of Business) formed a new theory about the mechanisms of financial markets called the 'Efficient Market Hypothesis'. As we have seen, supporters of the efficient market theory believe implicitly that markets are held in a rational equilibrium, representing at any moment all the information relevant to their pricing. Any new information about a stock or currency would be absorbed into the market and translated as a price movement. Such as a market structure, one that responded so smoothly to the random and unpredictable appearance of information, would not countenance the possible existence of irrational 'bubbles'. Thus, according to the theory, no matter how 'irrational and exuberant' it might appear, speculation's effect on the market was always going to be rational, leading to rational outcomes.

Chancellor challenges the plausibility of this position:

If markets were efficient and in constant equilibrium, and if price movements were always random, then the activities of speculators could be neither irrational in motivation nor destabilising in effect. Such a conclusion required the historiography of speculation to be rewritten, leading to a denial of the existence of 'irrational bubbles' and replacing them with [...] the tendentious notion of the 'rational bubble'.¹²⁷

Chancellor notes that according to Friedman, if share prices rose, no matter how energetically, 'it was for very good reasons'.¹²⁸ However, the boom and bust periods experienced since the first appearance of the theory have demonstrated that while markets might *appear* to be frequently efficient, they were certainly not so all of the time. The theory did not take into account periods of extreme volatility and instability resulting from speculation based on sentiment alone.

¹²⁷ Ibid., 243.

¹²⁸ Ibid.

As if to corroborate Friedman's bullish outlook, a new era of global economic development began to take shape in the late 1980s. American economist Robert J. Shiller, in his book *Irrational Exuberance*, identifies the late 1980s through to the 1990s as pivotal in the evolution of contemporary global economics. The dissolution of the Soviet Union in 1991 significantly increased market volatility, attracting along with it greater opportunities for speculative activity. This period included the prolonged economic slump experienced by Japan from 1989, and the Asian financial crisis of 1997 that began with a disastrous attempt by Thailand to float its currency despite its significantly high level of foreign debt.

Through such upheavals, America's robust free-market system appeared to become the desired global economic model, signifying the complete dominance of the United States in world markets. As U.S. economic rivals capitulated, an era of what Shiller appropriately terms 'triumphalism'¹²⁹ emerged. He elaborates by describing the relationship between the United States and its competitors during this period, 'as a competition in which there can only be one winner, as in a sports event'.¹³⁰

On 5 December 1996 in the midst of the raging bull market that had begun in 1992, Alan Greenspan addressed the conservative think tank, the American Enterprise Institute for Public Policy Research (AEI).¹³¹ In an otherwise nuts and bolts speech he introduced the now infamous term, 'irrational exuberance'.¹³² Greenspan was referring to the speculative bubble that had been expanding as a result of the economic and stock market boom over the preceding years. Although Greenspan's remarks were more specifically

¹²⁹ Robert J. Shiller, *Irrational Exuberance* (Princeton NJ: Princeton University Press, 2000), 21.

¹³⁰ *Ibid.*, 22.

¹³¹ The AEI mission statement reads like a checklist for neo-liberal economic policy: 'to defend the principles and improve the institutions of American freedom and democratic capitalism – limited government, private enterprise, individual liberty and responsibility, vigilant and effective defense and foreign policies, political accountability, and open debate'. See: <http://www.aei.org/supportFAQ#1> (accessed: 26/10/10).

¹³² Alan Greenspan, *The Challenge of Central Banking in a Democratic Society*. 'Clearly, sustained low inflation implies less uncertainty about the future, and lower risk premiums imply higher prices of stocks and other earning assets. We can see that in the inverse relationship exhibited by price/earnings ratios and the rate of inflation in the past. But how do we know when *irrational exuberance* [my italics] has unduly escalated asset values, which then become subject to unexpected and prolonged contractions as they have in Japan over the past decade?' For full text of the speech see:

<http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm> (accessed: 26/10/10).

directed at professional investment managers working for major banks, the term 'irrational exuberance' also came to describe the seemingly unshakeable, but misplaced, confidence displayed by the non-professional investing public. Like all booms, which must at some stage come to their natural conclusion, his comment about how asset values had 'unduly escalated'¹³³ sparked a minor sell-off on global bourses. More significantly, it presaged the massive sell-off that eventuated shortly after the start of the new millennium, brought on by the bursting of the dot-com bubble, and the falling value of the U.S. dollar.

Writing in *Manias, Panics and Crashes*, Charles Kindleberger traces the trajectory of speculative mania leading to a financial market bubble. Momentum begins with what he refers to as a 'displacement'¹³⁴, where a new object of investment appears on the scene as, for example, the Internet-based e-commerce companies of the dot-com era. Or, there could be a continued run of increased profitability of existing investments. Momentum to purchase more stock increases, further fuelling the mania. The euphoric loop is reinforced by *positive feedback* as details of profit opportunities proliferate via news media and the Internet. Shiller describes this process:

Amplification mechanisms work through a sort of feedback loop ... Investors, their confidence and expectations buoyed by past increases, bid up stock prices further, thereby enticing more investors to do the same, so that the cycle repeats again and again, resulting in an amplified response to the original precipitating factors.¹³⁵

In a typical boom for example, shares or commodity prices are driven upward by constant unconditional demand and a willing supply of stock. This rapid escalation eventually results in the unsustainability of high values and subsequent bouts of selling as confidence fades. Classically, sell-offs of this kind have largely been driven by counter rumours and growing negative sentiments about what appeared to be a never-ending bull market.

¹³³ Ibid.

¹³⁴ Chancellor op. cit., 53.

¹³⁵ Shiller op. cit., 44.

In the late 1990s e-commerce boom, new Internet-based start-up companies sprang up virtually overnight and floated on the stock exchange to take advantage of the decade's significant innovations in digital technology. Speculators, both professional and domestic, enthusiastically entered the market with many maximising their exposure through highly leveraged financial derivatives, often financed by second home mortgages and margin loans.¹³⁶ In a rising market all would be well, however under a margin loan arrangement if the value of shares sinks below a certain limit a margin call is issued, requiring the purchaser to deposit further funds, sell shares at a loss to top up available funds, or even risk forfeiting the entire share parcel to the issuer. For many speculators, lines of credit eventually became over-extended, and as it became apparent that the price-to-earnings ratio of many fledgling dot-com companies could not be sustained, a crisis of faith ensued, leading to large volumes of stock being dumped and, with tech prices plummeting accordingly, the overall market 'crashed'.

iii. The Need for Speed: The Democratisation of the Market

With the steady development of global markets came the increasing demand for technologies that would enable the rapid transfer and distribution of data. In 1971, the evolution of publicly accessed financial markets began in earnest with the establishing of the first electronic stock market, the U.S. NASDAQ (National Association of Securities Dealers Automated Quotations). The decade following the elimination of the gold standard saw the proliferation of companies providing, direct to the consumer, financial market trading software, market data and global news. Just two years after the abandonment of Bretton Woods, British news agency Reuters introduced a cable money rate service, and established a 24-hour global foreign currency market.

In previous speculative booms professional brokers provided the interface between the public and the markets, and trades could only be initiated and terminated through these agents. The rapidly expanding capability of the

¹³⁶ A margin loan permits the purchase of shares, for example, using an existing share portfolio or cash deposit as a bond. The loan is leveraged, meaning that shares can be purchased for a fraction of their face value thus providing greater exposure to the market.

digital and Internet eras rendered such intermediaries redundant. Broad public access to online trading platforms, and the same sources of market data available to professional traders, heralded a popular attraction to financial speculation unprecedented since the frenzied 1920s.¹³⁷

Shiller locates the widespread use of the Internet to facilitate speculative financial activity four years after the World Wide Web first featured in news reports in late 1993 (the Mosaic Web browser first became available to the public in February 1994). He notes: 'Large numbers did not discover the Web until 1997 ... marking the very years when the NASDAQ stock price index soared, tripling to the beginning of 2000, and the price earnings ratios took off into unprecedented territory'.¹³⁸ According to Shiller, 'the turnover rate (the total shares sold in a year divided by the total number of shares) for the NYSE nearly doubled between 1982 and 1999 [and] the NASDAQ shows an even greater turnover rate increase, from 88% in 1990 to 221% in 1999'.¹³⁹ Whether or not any correlation can be drawn between Shiller's observation regarding high Internet participation and the surge in stock prices is moot without a full statistical study available, however, the possibility is an interesting one.

After the 1987 stock market crash, in an effort to improve efficiency and profitability, a strategy known as 'downsizing' began to emerge, with many large corporations in the West jettisoning what was perceived as non-essential or non-productive staff. The lay-offs led to a widespread undermining of job security, and it became an imperative for employees-at-risk to find alternative means of independent and self-motivated financial support. As Shiller describes it, this resulted in 'a change in the way people viewed their lives', and a move for 'workers to take control of their own lives and to rely less on employers, to become in effect economic entities unto themselves, rather than parts of a larger economic organization'.¹⁴⁰ He

¹³⁷ Shareholder rolls in American corporations increased dramatically from 500,000 in the 1900s to 2 million in 1920, to over 10 million by 1930. The rapid rise of market participation was not confined to the very wealthy, with a greater percentage increase amongst lower income brackets. Statistics in George Frankfurter et al, *Dividend Policy: theory and practice* (Boston; Amsterdam: Academic Press, 2003), 31.

¹³⁸ Shiller op. cit., 19.

¹³⁹ Ibid., 39.

¹⁴⁰ Ibid., 23.

suggests that the desire to become an independent 'economic entity' drew many to the immense waves of speculative capital that flow around the world 24 hours a day. The term 'day trading' became synonymous in the 1990s with the growing cohorts of domestic speculators who participated in the market through online trading platforms provided by discount e-brokers.

Prior to the wide availability of the Internet, domestic traders relied on the slow telegraphic technology of the ticker-tape machine to provide data feeds from the bourse. The ticker-tape could not represent a comprehensive account of the market's rises, falls and trends; it could simply print out stock prices on strips of paper as alphanumeric sequences. From the opening price to the closing price each day, over weeks and years, the relationship between supply and demand had to be laboriously configured by hand on charts, diagrams, graphs and statistical tables. But this changed by the e-commerce boom days of the late 1990s when the home trader, using the Internet and specialised trading software, could now receive live data from global bourses that provided an instant market gestalt by means of interactive real-time charts.

Using online trading platforms, privateer traders could execute buy and sell orders as rapidly as their commercial counterparts. If desired, the interpretation of market data and execution of strategic trades based on a vast array of probability algorithms could even be entirely automated, relieving inexperienced speculators from having to make any decisions about which stocks to buy, and when to sell.

In a global market, company stocks, stock exchange indices, currencies, futures, options and other exotic financial instruments became available to all equipped with a high-speed Internet connection. Positions could be entered into and exited from without any consideration of the traded company's product, its balance sheet, or its ethics. Through the interplay of specialised and highly leveraged stock derivatives, falling share prices were traded with as much bravado as rising ones. Long-term investment was not the object, with day traders seldom holding a position overnight, avoiding the liability of unforeseen global events. Trades are conducted over a few hours, often minutes or even seconds, to pursue maximum gains with minimised risk. As

with computer role-play, such as in first-person shooter games, the relationship with the environment (in this case, the market) often becomes adversarial, with the day trader required to act decisively in order to take advantage of rapidly changing scenarios.

According to Shiller, this period was accompanied by the 'aggressively optimistic forecasts of stock analysts'¹⁴¹, with news media taking a leading role in providing the public with comprehensive coverage of the spectacle unfolding in the business world.

In Australia, the 1997 floating of the previously government-owned telecommunications and media company Telstra, provided the opportunity for 1.8 million Australians¹⁴², many for the first time, to take part in a market that was experiencing steady price rises. Online discount brokers such as E*Trade facilitated participation by members of the public in speculative trading, where even inexperienced traders could enter into and out of positions at the click of a computer mouse. Internet-based information communication services and chat rooms encouraged minute-by-minute attention to the market. After-hours trading on the exchanges increased obsessive interest in the market as investors tracked changing prices in their living rooms, even around the dinner table.

Almost 10 years after the 2002 'tech-wreck', day trading survivors still bivouac around the online trading chat-rooms and commune with each other in cyberspace, where the camaraderie is as palpable as in a gym locker room. Multinationals and the surviving dot-com merchants no longer offer promises of 'blue sky' opportunities, but there is a steady stream of income for the well prepared. Short-term profits can be chased on the 24-hour currency markets. At 8am in Sydney, day traders are watching Tokyo getting into gear; at 4pm Frankfurt and London are firing up, and at 11pm the beast in Wall Street begins to stir.

¹⁴¹ Ibid., 19.

¹⁴² Source: *The 7:30 Report*, Australian Broadcasting Association, <http://www.abc.net.au/7.30/stories/s39079.htm> (accessed: 17/09/10).

Speculators have arguably become, as Proudhon advocated, 'a creative social force'. The proliferation of cohorts of professional and semi-professional online market players, bypassing traditional stockbrokers, has heralded the era of a democratised financial market.

The figure of the day trader was the inspiration for my 2002 project *catchingafallingknife.com*.

iv. The Need to Know: The Democratisation of the Media

In his 1966 essay, *The Globalization 'Myth' and the Welfare State*, Pierre Bourdieu inferred that print and television media in the West functioned as a 'drip feed'¹⁴³ for society's perception of a reality constructed to further the interests of capitalism. Referring to the 'so-called law of the market [...] with no law other than that of maximum profit'¹⁴⁴, and what he refers to as 'radical, unfettered capitalism [...] pushed to the limit of its economic efficacy'¹⁴⁵, Bourdieu declares that the media, through its prodigious focus and constant output on the subject, predisposes the public to believing that global economic outcomes and their impacts on society are inevitable. He continues: 'A whole set of presuppositions is being imposed as self evident: it is taken for granted that maximum growth and therefore productivity and competitiveness are the ultimate and sole goals of human action; or that economic forces cannot be resisted'.¹⁴⁶ Bourdieu's concerns about the 'drip feed' were prescient. Prior to 1980, print and television had provided regular but intermittent global news updates. For the news hungry however, these media were rendered virtually obsolete with the advent of the 24-hour cable news channel.

CNN (Cable News Network), the first 24-hour cable news channel, was founded in 1980, with Bloomberg L.P. emerging the following year. CNN's coverage of global news events was later augmented by the rollout of

¹⁴³ Pierre Bourdieu, *Acts of Resistance: Against the Tyranny of the Market*, trans. Richard Nice (New York: The New Press, 1998), 30.

¹⁴⁴ Ibid., 35.

¹⁴⁵ Ibid.

¹⁴⁶ Ibid., 30.

business news networks, such as CNNfn, which ran from 1995 to 2004, and the long-running CNBC (Consumer News and Business Channel).¹⁴⁷

CNN's reputation of being 'on the spot' as news happened was firmly established with live coverage of iconic events such as the space shuttle 'Challenger' explosion in 1986, the first Gulf War in 1991, and the O.J. Simpson murder trial in 1995. These events signalled the growing public demand for the constancy of news coverage that hard copy news media was not capable of supplying.

Streaming news has also become firmly established as an essential tool of the business world, with CNBC and CNN permanently open windows to the world in most trading rooms. In a rapidly moving market, the immediate transmission and reception of news events is as essential as the direct transmission and reception of trading data from global bourses. Before cable television, the provision of global news reports to traders had been the domain of the information agency Reuters. This data was transmitted to traders' computers in the form of scrolling lines of text only. However, 24-hour markets needed an unbroken flow of news coverage, and by the 1990s the Reuters system had become redundant as developments in digital technology made possible the transmission of images and information at the same speed as trading data from the stock market.

Media companies, such as CNN, maintained their monopoly of news and images until midway through the first decade of the new millennium when on Boxing Day in 2004, personal camera phones were first used to record and distribute images across the globe of a significant news event – the Indian Ocean earthquake tsunami.¹⁴⁸ The progressive dissolution of the dominant control of media networks is subsequently being played out in the evolving social role of the documentary image within the public domain. The increasing democratisation of the media has been made possible by digital production and distribution applications such as *moblogging*, in which user-generated

¹⁴⁷ See: www.reuters.com; www.cnn.com; www.bloomberg.com; www.nasdaq.com and www.cnbc.com (accessed: 30/08/10).

¹⁴⁸ See: <http://www.manufacturersdirectory.com/technology/camera-phone.aspx> (accessed: 15/03/11).

images and data can be shared via mobile phones. Digital distribution technologies have also enabled the exponential rise of social networking and image-sharing sites epitomised by the applications *Facebook*, *Twitter*, *Flickr* and *YouTube*.

In his provocative book *The Empire of Mind: Digital Piracy and the Anti-Capitalist Movement*, cultural theorist Michael Strangelove makes a case for what he regards as the necessary and inevitable democratisation of public media. He speculates that the assault on intellectual property, facilitated by digital technology and the Internet, may ultimately have positive, if controversial, outcomes. In support of his claims he refers to media theorist Henry Jenkins' assertion that an 'audience's interpretive capabilities [have become] delegitimised in favour of the commercial interests of authorised authors'.¹⁴⁹ He cites the rise and development of the anti-corporate 'culture jamming' movement as signalling what he terms 'a broad shift away from a generalised respect for the text's authority'¹⁵⁰ – in most cases representing a disavowal of global capitalism.

In addressing the relationship between syndicated and democratised media, the historical distinctions between different modes of image capture and distribution that define the two need to be considered, namely *delayed-time* and *real-time* transmission. It is in the shift between these modes that the quantum change in image theory and practice occurred during the first decade of this century. In understanding this shift it will be useful here to consider Virilio's differentiation, borrowed from philosophical discourse, between orders of image logic, each corresponding to a particular stage of historical development.¹⁵¹

According to Virilio, the 18th century provided the *formal logic* to be found in European painting, engraving and architecture. Here, durational flow is of little relevance. The figure, situated in a composition, arrested in the moment, is of paramount importance. Time, it may be said, is absolute.

¹⁴⁹ Michael Strangelove, *The Empire of Mind: Digital Piracy and the Anti-Capitalist Movement* (Toronto; London: University of Toronto Press, 2005), 4.

¹⁵⁰ Ibid.

¹⁵¹ Paul Virilio, *The Vision Machine* (Bloomington: Indiana University Press, 1994), 63ff.

Photography and cinematography provide the framework in the late 19th and the 20th centuries for his next stage of image logic – *dialectical logic*. Here the image corresponds to a specific event in the past, characterised by a delay in its public transmission and reception. It is this type of image that we have grown most used to as constituting documentary and news photography.

On 11 September 2001, CNN and other major news networks inadvertently broke with this form of image logic when they covered the attacks on the World Trade Centre towers, by broadcasting their collapse in *real-time*. This event, apart from constituting one of the defining moments to date of the 21st century, also initiated a shift in the production and distribution of news images. Significantly, the tragic event marked the global introduction of the transmission of documentary or evidential images emanating not from network cameras, but from the public domain. Nearly four decades after the incidental filming by Abraham Zapruder of the John F. Kennedy assassination¹⁵², the era of the democratised image began in earnest.

The omnipresence of personal recording devices (a.k.a. handycams) on the streets of New York on the morning of 11 September 2001 resulted in a significant repository of images of the ensuing disaster. Video cameras were rolling when the first and then the second plane hit the towers, and the resulting tapes soon found their way to the news networks. But the real *revolution* – the real-time, instantaneous transmission of news images from the public domain – had not yet quite begun. When the images were broadcast several hours later they were fixed in time past and, like the Zapruder film, they were still products of what Virilio termed ‘the age of cinematography’. The 9/11 happenstance image sequences gained their critical momentum not by their *instantaneity* but by their constant *iteration* over the following days. The image loop became, as Virilio has observed, the

¹⁵² Dallas resident, Abraham Zapruder, was filming the John F. Kennedy motorcade through Dealey Plaza on 22 November 1963 when the President was shot. His Super 8 movie captured the moments the bullets hit JFK and, with their worldwide publication, came to represent the definitive images of the assassination.

“signature” of contemporary disasters ... as though only repetition could remedy the inexplicable’.¹⁵³

With its opening on 6 September 2001, an extraordinary coincidence began to play out in a project by artist Wolfgang Staehle at the Postmaster’s Gallery in New York.¹⁵⁴ Staehle had placed a digital camera at three locations, two of which were in Germany, focused on the Berlin TV tower and a Benedictine monastery respectively. The third camera was trained on the lower Manhattan skyline. Images were streamed every few seconds to the gallery via the Internet and projected onto adjacent walls, providing concurrent panoramic views. As surveillance instruments, these cameras were engaged in compiling a record of the mostly uneventful passage of time – that is until disturbed by incident as they were on the morning of 11 September. In many ways Staehle’s shocking images of the aircraft impacts and the collapse of the towers equal Zapruder’s in their historical significance. The major difference was that Staehle’s images were not the result of a chance encounter. The *modus operandi* of his project drew its logic from the era of omnipresent surveillance, which continuously bears witness.¹⁵⁵

¹⁵³ Paul Virilio, *City of Panic* (Oxford; New York: Berg, 2005), 85.

¹⁵⁴ Staehle’s project was titled *2001*. See: <http://www.postmastersart.com/archive/staehle.html> and http://www.acrstudio.com/projects/word/staehle_wolfgang/untitled_2001_on911_560x210.jpg (accessed: 15/04/10).

¹⁵⁵ This theatre of continuous surveillance played out again on 15 January 2009 when the ditching of U.S. Airways Flight 1549 into New York’s Hudson River was captured by coastguard security CCTV cameras. This time, the public video-sharing platform *YouTube* provided the means to distribute these images well before the news networks could. See: <http://www.youtube.com/watch?v=fwle-e7Apc>, and <http://www.youtube.com/watch?v=FIS-aKJMY3E&feature=channel> (accessed: 15/04/10).



Wolfgang Staehle, 2001 (Source: Postmasters Gallery, N.Y.)

The decade after 9/11 saw the conventions of photography and cinematography progressively superseded by Virilio's third kind of image logic – the *paradoxical logic* of the digital age. Here, according to Virilio, 'the real-time image dominates the thing represented [...] virtuality dominating actuality'.¹⁵⁶ With the development of optoelectronic devices such as photo and video-enabled cell phones, images of significant events are being captured by the public and transmitted in real-time to a global audience, bypassing the syndicated networks.

The first demonstration of this phenomenon attributed to a globally significant event was, as mentioned, the 2004 Indian Ocean earthquake tsunami. In

¹⁵⁶ Virilio, *The Vision Machine*, op. cit., 63.

2006, a mobile phone was again used in the infamous capture and immediate distribution of video images of deposed Iraqi president Saddam Hussein's execution. CNN later reported what was termed a *Bluetooth* frenzy¹⁵⁷ in Iraq as the images were transferred from phone to phone in cascades of real-time, streaming citizen's broadcasts.¹⁵⁸ It then took only a short while for the images to be picked up by *Google*. An Iraqi Government-sanctioned video, expunged of sound and the more graphic images, was released into the mediasphere after being 'leaked' to Middle East news agency Al Jazeera. But it was the unofficial version, with unexpurgated audio of the taunted Saddam and the close-up video of his swinging body and contorted intra-mortem face, that really shook the world. What is significant about this use of personal technology, now commonplace for distributing images of real-time events, is that news had been produced, not for consumers by media networks, but *for* consumers *by* consumers. This poses significant challenges to global news syndication.

Media networks have developed an aggressive counter-strategy aimed at coopting images emanating from millions of potential news reporters in the public sphere and controlling their distribution. On 20 January 2009, CNN invited members of the public attending Barack Obama's inauguration to use mobile phone cameras to capture the moment the new president raised his hand to take the oath. Participants were to send to the network, as soon as possible after capture, 5Mb wide-angle, mid-zoom and full-zoom images of their points-of-view of the spectacle. An interactive digital composite of photographs was then created with Microsoft's Photosynth software and distributed virtually instantaneously on the Web. Anyone able to download the viewing software, available free from Microsoft, could then navigate almost 360 degrees in and around the scene.

¹⁵⁷ *Bluetooth* is an open wireless transmission network technology used for short-distance communication between fixed and mobile phones. See: www.bluetooth.com

¹⁵⁸ See: http://www.cameraphonereport.com/2006/12/cnn_saddams_cam.html (accessed: 16/04/10).



(Source: Microsoft Corporation)

It was CNN's stated intention to 'make average people virtual historians'¹⁵⁹ and to 'create the most detailed experience of a single moment ever'.¹⁶⁰ Hardt and Negri have identified this type of apparently altruistic project as an attempt by communications companies to create hybrid models 'in which the appearance of supporting democratic networks belies the true intention to use the new networking technologies to coopt users through the formation of quasi-monopolies that effectively dominate information infrastructure'.¹⁶¹

While the Obama inauguration image-capture event was to mark an attempt by a syndicated network to reassert control over public distribution, the digital image has nonetheless demonstrated itself to be a fluid medium, readily able to migrate between public and private domains via social networking platforms.

Virilio's prophecy has been realised – that of the 'generalized tele-surveillance of a world' in which, as he puts it, 'the famous virtual bubble of the financial markets [has been] supplanted by the visual bubble of the *collective imaginary*'.¹⁶² He posits the emergence of an organised public, comprising virtual communities, 'communities of believers, organized in networks around

¹⁵⁹

http://www.cio.com/article/477176/Microsoft_CNN_to_Make_Historians_Out_of_Inaugural_Attendees (accessed: 23/04/10).

¹⁶⁰ <http://bradleycain.com/cnn-and-microsoft-to-capture-most-detailed-moment-ever-for-obama-inauguration/> (accessed: 23/04/10).

¹⁶¹ Hardt and Negri op. cit., 300.

¹⁶² Paul Virilio, *The Information Bomb* (London: Verso, 2000), 112ff.

the Internet [...] “telepresent” one to another’.¹⁶³ This would herald the creation of a *teletopographic locale*, comprising real-time image and audio streams functioning beyond the influence and authority of syndicated media. However Virilio offers a note of caution, for it is in this arena of immediacy that he identifies a hazard he calls the ‘fusion/confusion’ of the factual and the virtual and the ‘predominance of the *effect* of the real’ over a reality principle.¹⁶⁴

In sharing Virilio’s caution, Baudrillard expands on this ‘effect’. He suggests that ‘when an event and the broadcasting of that event in real-time are too close together, the event is rendered undecidable and virtual, it is stripped of the historical dimension and removed from memory’.¹⁶⁵ According to Baudrillard, the result is a disturbance of the relationship between the image and its referent, and an inversion of ‘the causal and logical order of the real and its reproduction’.¹⁶⁶ He proposes that the media image, apart from mirroring the real, in fact begins to ‘contaminate reality and to model it’, leading ultimately to the ‘implosion of image and reality’.¹⁶⁷

Despite Baudrillard’s concern, applications of real-time and synthetic digital mediums produce more than just fragmented and shifting information. Increasingly, the popular reclamation or democratisation of the image generates the potential for significant political engagement and reappraisal of history, particularly through the realisable distribution of cultural product beyond the influence of the information and image-content industry.

This particular cultural product embodies what Guy Debord, writing in *The Society of the Spectacle* termed the ‘flexible language of anti-ideology’¹⁶⁸ where instead of being *subject* to the image’s authority, its appropriation

¹⁶³ Ibid., 117ff.

¹⁶⁴ Quoted in Eduardo Kac, *Telepresence Art*, see: http://www.ekac.org/Telepresence.art_94.html (accessed: 24/04/10).

¹⁶⁵ Baudrillard, *The Intelligence of Evil or the Lucidity Pact*, op. cit., 75.

¹⁶⁶ Jean Baudrillard, *The Evil Demon of Images* (Sydney: The Power Institute of Fine Arts, 1987), 13.

¹⁶⁷ Ibid., 25.

¹⁶⁸ Guy Debord, *The Society of the Spectacle* (Detroit: Black & Red, 1977), 7.

effectively *confiscates* that authority, re-assigning it to the social domain of art and life.¹⁶⁹

¹⁶⁹ Craig Owens describes the re-assignment of cultural product in terms of *allegory*. He writes: 'One text ... read through another [...] The allegorist does not invent images but confiscate them'. See: Craig Owens, 'The Allegorical Impulse: Toward a Theory of the Postmodern', in *Beyond Recognition: Representation, Power and Culture*, ed. Scott Bryson et al (Berkeley: University of California Press, 1992), pp. 52-53.

Chapter 3: First-person Trader

i. Computer Simulation Games and Online Trading

In referring to the digital photographic image it is no longer reliable to define it as that trace of reality captured through the aperture of a camera. The digital image is better described as resembling a flexible framework or fluid substrate that can be entered into, modified and expanded. The contiguity of photographic reality and the virtual reality of CGI¹⁷⁰ necessitates a broader definition of the image. In what he referred to as the image's 'deregulation',¹⁷¹ Baudrillard has questioned the relationship between photography and the digitally generated image. He asks with regard to the latter, 'Can this be an image, where the technical fine tuning [...] is perfect [and] there is no room for fuzziness, tremor or chance?'¹⁷² Baudrillard has as much suggested that digital multi-mediatising constitutes an 'opening up to the infinite', and that this deregulation represents 'literally the death of photography by its elevation to the stage of performance'.¹⁷³ If Baudrillard was correct in presaging photography's demise, its remains are however well manifested in a host of reality simulating 3D modelling algorithms embedded in *computer game* software.

Reality simulation computer games (a.k.a. 'sims') include first-person shooter games, geo-political games and role-play scenarios. Their legions of players comprise, to borrow from Virilio, a community of believers for whom the fusion/confusion of the factual and the virtual represents a desirable condition. There is an interesting correlation in the development of sophisticated mouse-navigated games such as *Doom*¹⁷⁴, through the 1990s, and that of capital market online trading platforms.

The online trading 'community of believers' bears a number of similarities to computer game scenarios in which players project and apply a number of their senses into what they consider to be believable teletopographical

¹⁷⁰ Computer-generated imagery.

¹⁷¹ Baudrillard, *The Intelligence of Evil or the Lucidity Pact*, op. cit., 28.

¹⁷² Ibid., 28.

¹⁷³ Ibid., 110.

¹⁷⁴ See: <http://au.wireless.ign.com/articles/104/1041847p1.html> (accessed: 14/01/11).

locales. In Massively Multi-player Online Role-play Games (MMORPGs) players interact by means of avatars, personal entities that exercise one or multiple identities. During the process of gameplay anxieties, elation, and moral and ethical dilemmas are identical to those emotions and responses experienced away from the monitors. To all intents and purposes, the participants *are* experiencing reality.

Similarly, the electronic trading market – with its abstract and shifting scenarios – is a virtual environment rendered real on the computer screen by means of constantly updating price matrices, charts and interactive graphic indicators. With each mouse click as they enter or exit a trade and ponder their decisions, online traders might experience anxiety, elation and even moral and ethical dilemmas. Traders' avatars are the 'buyers' and 'sellers' interacting in a zero-sum game in which one participant's gains and losses must be equally balanced by another's gains and losses.

Many multiplayer online role-playing games feature virtual financial systems. *Second Life* (SL)¹⁷⁵ was launched by Linden Lab in 2003 and as of 2008 reportedly had over six million players, of whom over one and a half million had logged on in the two months prior to the report's publication¹⁷⁶. The viewer interface known as the *Second Life Grid* has free access, with serious players becoming 'Residents' and earning the right to purchase virtual land and services from Linden Lab using SL currency, Linden dollars. Players circulate in SL as avatars whose personas and physical appearances are formed using 3D modelling software provided on the grid. Residents can model architecture, environments and consumer items such as jewellery, weapons, and avatar accessories including 'skins' with which to embellish their appearances.

Avatars engage socially with each other (virtual cybersex between avatars is common, with Residents constructing erotic scenarios using motion-capture

¹⁷⁵ *Second Life* was developed by U.S. software company *Linden Lab* (formed in 1999). The *Second Life* virtual world is extensive and complex, and thus will not be described in detail in this thesis. For further reference, see: Wagner James Au, *The Making of Second Life* (New York: Harper Collins, 2008), and www.secondlife.com

¹⁷⁶ See: <http://www.betanews.com/article/How-Many-Users-Does-Second-Life-Really-Have/1178573043> (accessed: 27/09/10).

software), and enter into transactions in which goods and services are bartered, or bought and sold for Linden dollars. The buying and selling of real estate is common in the virtual world, with Residents able to profit as they might in the real world by purchasing property from Linden Lab and selling it on to other Residents for a premium. Residents can exchange Linden dollars for real-world currency (U.S. dollars) through SL accounts linked to the PayPal system. Linden Lab finances the SL economy from subscriptions of Premium Members and by featuring the commercial interests of real world companies who have their own retail outlets selling avatar-ware, with links to their real world online stores. Writing in *The Making of Second Life*, Wagner James Au reports that by 2007, 'Capitalists, whose dominant SL activity is running a business [...] comprised well over 42,000 Residents with a positive cash flow, earning more Linden dollars from their enterprises than they were paying for virtual land and other services'.¹⁷⁷ According to Au, 'the Linden dollar equivalent of hundreds of millions of dollars changes hands every day'.¹⁷⁸ More recent statistics (2008) revise upward to 160,000 the number of Residents with positive cash flow.¹⁷⁹

Linden dollars can also be bought and sold in accordance with daily market rates on the SL currency exchange, *LindEx*. At the time of writing, US\$1 equals 260 Linden dollars.¹⁸⁰ Second party currency exchanges have sprung up around SL, such as *CrossWorlds Xchange*.¹⁸¹ Arbitrage profits can be made from buying and selling Linden dollars and U.S. dollars on different online markets, taking advantage of rates of exchange that fluctuate over 24-hour periods. A shadow SL currency market is also in evidence with tranches of Linden dollars regularly auctioned on *eBay*.

The profit-making activities of virtual worlds have not escaped the attention of tax legislators. In a 2007 interview with the *Sydney Morning Herald*, an Australian Taxation Office (ATO) representative stated, with regard to SL, 'income will not be treated any differently than if you earned it working nine to

¹⁷⁷ Au op. cit., 150.

¹⁷⁸ Ibid., 166.

¹⁷⁹ See: <http://secondlife.reuters.com/stories/index-3551.html> (accessed: 27/09/10).

¹⁸⁰ See: <http://secondlife.com/statistics/economy-market.php> (accessed: 27/09/10).

¹⁸¹ <http://www.crossworldsxchange.com/> (accessed: 27/09/10).

five in an office. The real world value of a transaction may form part of your taxable income even if it is in Linden dollars. In addition, there may be GST (Goods & Services Tax) to consider.¹⁸²

The ATO's interest in the commercial potential of virtual economies is inevitable. Economist Edward Castronova suggests that 'virtual worlds may also be the future of e-commerce, and perhaps of the Internet itself'.¹⁸³ In 2001, Castronova embedded himself in the virtual world of *Norrath*, situated in the multiplayer online game *Everquest*.¹⁸⁴ The principles of the game are basically the same as *Second Life*, featuring interaction, social networking and trade between avatars. The unit of currency is the PP or 'Platinum Piece'. Castronova's research revealed that the average individual currency holding of residents is the equivalent of US\$3,000 each.¹⁸⁵ This would rate the Gross Domestic Product of *Norrath* in 2001 in the millions of dollars. Sony Corporation has declared the currency of *Norrath* is the company's intellectual property and hence any trade outside of the game is illegal. Nevertheless, Castronova notes, 'several dollar-based markets for platinum pieces, avatars, and other items exist on Web auction sites'.¹⁸⁶ Mimicking trade in the real world shadow banking system, *Norrath* foreign exchange and trade flourishes on the online secondary market.¹⁸⁷ Castronova compares the economic state of *Norrath* to Cuba's, where 'U.S. dollars trump the official economy'.¹⁸⁸

Barter between residents resembles a bazaar, where, according to Castronova, 'In a2a (avatar-to-avatar) commerce, avatars on the supply side must constantly shout out what they have, and avatars on the demand side must hear the offer, find the seller, and then haggle over price'.¹⁸⁹ This to all

¹⁸² See: *Four Corners*, Australian Broadcasting Corporation,

<http://www.abc.net.au/4corners/content/2007/s1876068.htm> (accessed: 25/09/10).

¹⁸³ Edward Castronova, 'Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier', *The Gruter Institute Working Papers on Law, Economics and Evolutionary Biology*, Volume 2, Issue 1.

<http://www.bepress.com/cgi/viewcontent.cgi?article=1008&context=giwp> (accessed: 23/08/10).

¹⁸⁴ *Everquest* was launched in 1999 by Verant, a holding of the Sony Corporation. See: <http://everquest2.com> Castronova estimates the population of the original *Everquest* game at 'tens of thousands', op. cit. 3.

¹⁸⁵ Castronova op. cit., 23.

¹⁸⁶ Ibid., 25.

¹⁸⁷ See: *MMORPG Trade Portal*, <http://mmotp.com/trade/> (accessed: 27/09/10).

¹⁸⁸ Castronova was writing in 2001 when the U.S. dollar was still legal tender in Cuba. See:

<http://news.cnet.com/2100-1040-823260.html> (accessed: 27/09/10).

¹⁸⁹ Castronova op. cit., 22.

intents and purposes is the same as the 'open outcry' system of financial derivative markets, such as that of the Chicago Mercantile Exchange, where prior to the transfer to electronic systems, traders reached agreements by calling out bids and offers in the trading pit.

Castronova is of the opinion that the global convergence of virtual worlds will become increasingly economically viable. The Swedish 3D Internet developer *Mindark*¹⁹⁰ has expressed its intention to merge online games, virtual worlds and social networking into a single interconnected unit that the company refers to as the *Entropia Universe*. The aspiration to form an entity with shared interests appears to have some resonance with that of the European Union (even reflected in its proposed acronym, EU). Theoretically, within this global matrix players would socially interact, trade and network with commercial interests across a porous interface between virtual and real worlds. Millions of users would be united in what the computer game industry refers to as a 'MUSH' – a Multi-User Shared Hallucination'.¹⁹¹

Arguably, participants in electronic markets do experience an equivalence of the multi-user shared hallucination. With markets no longer physically contained, the dance between buyers and sellers is now purely representational. This is clearly demonstrated in the secondary financial market innovation known as *Contracts for Difference* (CFDs). Trading in a host of markets from currencies to options, based on real market prices, the CFD provider acts as the market maker and conducts its dealings with the public via an online trading platform. CFDs mimic leveraged financial instruments, and the agreement entered into between a trader and a provider to all intents and purposes resembles the mechanisms and processes of the real market.¹⁹² However, the values of transactions are based purely on

¹⁹⁰ See: www.mindark.com/company (accessed: 27/09/10).

¹⁹¹ *Au op. cit.*, 4.

¹⁹² To take into account the slippage between the real market and a virtual one, CFD providers usually publish a disclaimer stating that all displayed prices 'are indicative only'. As no *actual* share or currency transactions are involved, trades are settled in profit or loss according to the *difference* between the opening and closing level of that particular trade. The outcome of the transaction is based on the *performance* of the share or currency on their respective markets. Because no stock or derivative is actually held, CFDs are closely related to 'spread-betting'. Through their complex legal definition CFD outcomes are determined on relative performance rather than actual outcome, and as this is regarded as a form of wagering, trading profits are thus effectively capital gains tax-free (equally, losses cannot be declared as capital losses). CFDs were developed in the U.K. in the late 1990s, becoming available

consensual agreement between provider and consumer. Perhaps *Contracts for Difference* constitutes the true 'ultimate market'.¹⁹³

ii. The immersive trading environment

In the teletopographic environment of electronic stock trading, the accuracy of the visual representation of the market is critical for the trader. Different forms of stock charts and a range of graphic indicators represent the ebb and flow of the market, and even though they manifest as seemingly abstract patterns and configurations, they reflect the composite trading decisions made by thousands of invisible individuals within a shared virtual world.

Sociologist Karin Knorr-Cetina describes the global financial market in processual terms, as a time or 'flow world'. Its existence – its architecture – is readily visible at any moment in time on the computer screen. The screen itself is paramount in this scenario. Computer terminals are more than a means to enact transactions and to issue communications to colleagues across the globe; their screens are scopic portals through which one can be 'in the market'.¹⁹⁴ This is a *shared world*, visible to all participants, facilitated by technology and information systems.



(Source: Associated Press/Alastair Grant)

in Australia in 2002, and feature simulations of all market instruments, including options and index trading.

¹⁹³ Refer to the website of *IG Markets*, a major international provider of CFDs: www.igmarkets.com

¹⁹⁴ Karin Knorr-Cetina and Alexander Preda, *The Sociology of Financial Markets* (Oxford: Oxford University Press, 2005), 45.

Knorr-Cetina cites a trader referring to the market manifested on the screen as being like a 'life form in its own right', virtually a 'greater being'.¹⁹⁵ The epicentre of the trader's world is not the electronic infrastructure, the conduit, through which transactions flow. It is the *screens* that 'instantly reflect, project, and extend the reality of [the] markets in toto'.¹⁹⁶ Identical screens on commercial trading floors form what Knorr-Cetina refers to as 'one huge compounding mirror' that reflects on all market participants. For Knorr-Cetina, this presence constitutes a complex *other*. The screen is not simply a medium for transmitting data but, in displaying the vast array of information detailing the ebb and flow of prices, book-keeping details, global news and research, the screen is thus 'a building site on which a whole economic and epistemological world [of the trader] is erected'.¹⁹⁷

Like participating players in online simulation games, traders experience a co-presence, a consensual hallucination. They are linked to each other in time, watching the same data flickering on the screen. This degree of immersion in the markets, with the computer screen as an intermediary, suggests a strong even obsessive engagement. Knorr-Cetina and Bruegger describe this relationship as *postsocial*¹⁹⁸, where a relational bond exists between humans and objects and object-worlds (such as a computer and its networks). Similarly, as has been mentioned with regard to my project *Avatar*, Baudrillard described the immersive pull of the computer screen as being like 'a sort of umbilical relation'¹⁹⁹ – a tactile connection through which the observer can enter the fluid substrate of the images on the screen.

Before the technology that paved the way for instantaneous global data exchange, consensus on prices had to be achieved through the use of a complex network of telephone lines between banks and brokers. Knorr-Cetina points out that after the global availability of market data was provided by Reuters in 1981, 'the market no longer resided in a network of many places,

¹⁹⁵ Ibid., 147.

¹⁹⁶ Ibid., 48.

¹⁹⁷ Ibid.

¹⁹⁸ Karin Knorr-Cetina and Urs Bruegger, 'Traders' Engagement with Markets: A Postsocial Relationship' in *The Blackwell Cultural Economy Reader*, ed. Ash Amin, Nigel Thrift (Malden, Massachusetts: Blackwell, 2004), 163.

¹⁹⁹ Baudrillard, *The Intelligence of Evil or the Lucidity Pact*, op. cit., 76.

but only in one, the screen'.²⁰⁰ This radically altered the spatial relationship between traders. As a community, unlike other computer-based communities that are related spatially (such as in online gaming virtual space), traders on 24-hour markets interact across *time zones* as each regional trading session commences and ends. What holds participants together across space is a “community of time” rather than a community of space'.²⁰¹

²⁰⁰ Knorr-Cetina, *The Sociology of Financial Markets*, op cit., 54.

²⁰¹ Ibid., 56.

Chapter 4: Reading the Signs

i. A Complex System

Bernice Cohen, writing in *The Edge of Chaos: Financial Booms, Bubbles, Crashes and Chaos*, defines a *complex system* as consisting of 'numerous elements which constantly interact with each other in hundreds, thousands and often millions of varying ways'.²⁰² Within its spatio-temporal matrix the market functions as a complex system, reflecting all of the constituent elements in play at any one time, flexing or shrinking in response to the fundamentals of the economy and the buying and selling sentiments of investors and speculators.

Constituents of complex systems, and in particular complex adaptive systems (such as ecosystems), can coalesce into groupings of varying sizes. These in turn develop new characteristics, displaying separate features from the entities out of which they evolved. The new groupings are known as *emergent systems*, continually changing and adapting to attain a highly fluid and 'far from equilibrium state'.²⁰³ Over time the groupings can appear to take on the features of spontaneous, non-linear self-organisation, always absorbing new information from their environment. The systems proliferate, reach what appears to be a balance, only to re-form producing new and unexpected synergies. Cohen describes this state as 'the edge of chaos [where] the boundaries of change are forever shifting between a stagnant status quo and the anarchy of perpetual disruption'.²⁰⁴

It is tempting to equate the behaviour of complex systems such as weather patterns with that of financial markets, or to imagine that the market is a life force capable of metamorphosing of its own accord. However, as thousands of investors and speculators are engaged in the market at any one time, and given that through their transactions millions of new elements will be added or subtracted from this complex system, patterns will inevitably be discerned as emerging from their collective behaviour. Analysts of complex systems, such

²⁰² Bernice Cohen, *The Edge of Chaos: Financial Booms, Bubbles, Crashes and Chaos* (New York: John Wiley and Sons, 1997), 66.

²⁰³ *Ibid.*, 67.

²⁰⁴ *Ibid.*, 69.

as Cohen, assert that over a period of time a financial market can appear to develop new properties independent of the individual trades that comprise its totality. This kind of behaviour can be observed when, over intervals of weeks or even months, the price of a stock repeatedly retreats on reaching a particular level. Likewise, the price of a stock might retreat repeatedly to a certain level but always bounce back at that point. These are known respectively as historical resistance and support levels. The eventual breaching of those levels often results in a chaotic consolidation period and the emergence of a new trend accompanied by strong momentum. In the case of a market crash, as described in Chapter 2, a sudden slide in prices through support levels breeds feedback loops, and a cascade of further falls which, if sustained, give the market the appearance of being in free-fall.

Market ‘accidents’, although rare, can also trigger major market fluctuations. On 6 May 2010, the Dow Jones, the US bellwether stock index, plunged close to 1000 points in the space of six minutes. Analysts looked for fundamental reasons for the crash, initially citing the economic turbulence in Europe and in particular Greece. But on closer investigation it was discovered that a trader working for the investment bank Citigroup, in the process of executing what was intended to be a \$16 million futures market transaction, apparently erroneously entered the amount to be sold against *Proctor and Gamble* stock as being \$16 *billion* dollars. As *Proctor and Gamble* is a major component of the key S&P 500 stock index, the collateral panic spread, resulting in other stocks including those on the Dow Jones index being sold off. When the error, which became known as the ‘Fat Finger Trade’²⁰⁵ was discovered, the Dow Jones recovered but still ended the day down 300 points. This suggested that even though there might have been a rational explanation for the plunge, the market’s tendency was to teeter on the edge of chaos. Cohen refers to these types of events as stochastic – or random behaviour – where the forces shaping the market are ‘lawless and irregular, ruled by chance’.²⁰⁶

²⁰⁵ See: <http://abcnews.go.com/Business/dow-jones-dives-european-debt-scare-shakes-us/story?id=10576136> (accessed: 10/10/10).

²⁰⁶ Cohen op. cit., 76.

ii. Technical Analysis of the Market

In complex systems, chaotic behaviour is the seeding ground for the development of recognisable *patterns*, or signs that begin to display market mentality – the collective sentiments of the market's participants. It is these behavioural clusters and recurring patterns that the technical analyst looks to in determining where immediate, intermediate and long-term trends are most likely to emerge. Technical analysis, as mentioned above, is dissimilar to fundamental analysis in that the practice does not focus on typical economic data such as company annual reports, balance sheets, and policy statements. Technical analysis essentially 'refers to the action of the market itself as opposed to a study of the goods in which the market deals'.²⁰⁷ According to Edwards and Magee: 'Technical analysis is the science of recording, usually in graphic form, the actual history of trading (price changes, volume of transactions, etc.) ... and then deducing from that pictured history, the probable future trend'.²⁰⁸ Trends can be studied in the long term as either ascending 'bull' markets, or as the descending drift of 'bear' markets. The graphic representation and interpretation of changes in price or index levels is also analysed in the short to medium term, from hours or minutes, and even seconds in duration.

The major argument put forward by exponents of technical analysis against the efficacy of fundamental analysis is that price fluctuations are brought about by a multitude of factors, many of which are spontaneous and *irrational* in nature. These changes cannot be accounted for in company documents, nor in what is generally thought of as a company's financial health or worth. While market prices are undoubtedly affected by economic factors, the market is also influenced by *sentiment* – the hopes and fears, the greed or risk aversion of its participants. These responses are difficult to analyse, let alone predict. Thus, the technical analyst prefers to regard *price action* as best reflecting the vagaries of sentiment. Understanding or being 'in tune' with the market as a real-time system optimises the possibilities for acting

²⁰⁷ Robert D. Edwards and John Magee, *Technical Analysis of Stock Trends* (Boco Raton: St. Lucie Press; New York: AMACOM, 1998), 4.

²⁰⁸ Ibid.

strategically. The technical analyst constructs predictions about the future behaviour of the market based on its historical performance, probability and the conviction that price movements are not random. Probability is a key factor in this process, with proponents of the above-mentioned 'random walk hypothesis' asserting that the technical analysis of the market can only prove effective *in hindsight*.

Sophisticated technical analysis in the Western world began in the U.S. in 1896 with the founding of the *Dow Jones Financial News Service*. The editor of the *Wall Street Journal*, Charles H. Dow, and statistician Edward Jones, developed an analysis of U.S. business sentiment based on the news service's Dow Jones Industrial Average index (DJIA), which tracked the price movements of twelve of America's most highly capitalised companies. Dow's successor on the *Wall Street Journal*, William P. Hamilton, over the course of twenty-seven years compiled and structured Dow's writings into what is now known as Dow theory. The theory focused on the observation that the price of the companies in his study tended to move up or down in unison. Dow noticed that few stocks 'moved against the financial tide'²⁰⁹, as Edwards describes it, and that over periods of time, trends in price movements could be identified. Formulating an average for this *composite* movement became the focus of Dow and Jones' research, with the index simply dividing the total price of its constituent stocks by the number of stocks.

The Dow Jones Industrial Average now comprises thirty companies, with the index one of the most closely watched indicators of business and economic sentiment (along with the NASDAQ Composite, the S&P 500 Index and the Russell 2000 Index). The performance of the DJIA has implications for many global markets. For example, if the Dow Jones advances or retreats, the Australian stock market generally responds accordingly. Reflecting the complexity of stock splits, dividends and bonus payouts by its constituent companies, the present DJIA is not merely an averaging of the price movements of its components, but the result of a complex, periodically revised formula driven by what is known as the Dow Divisor, which calculates

²⁰⁹ Ibid., 14.

that every \$1 change in price of a particular stock in the index equates to a 1/0.132129493 point change in the index.

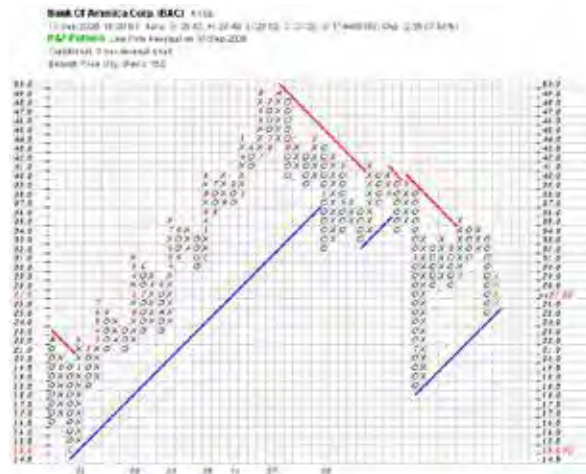
The DJIA is represented numerically, and as a chart indicating its open, high, low and closing levels on each day the New York Stock Exchange is open. Although the index could be criticised as not providing a true picture of business sentiment, as it represents only thirty of the stocks trading on the New York Stock Exchange, its importance to the history of Western technical analysis lies in its identification of similarities in the movement of component stocks within the DJIA, and of the DJIA itself.

Dow theory revealed that major trends either up or down, once established, tend to continue until a decisive reversal of direction occurs. Evidence put forward by Dow suggested that although the market consisted of a vast number of agreements between buyers and sellers at any one time, the trends and fluctuations that emerge resonate with the movements of their component parts.

At the time Dow and Jones were conducting their study and the science of market analysis was gaining favour, a small machine known as the *stock ticker* (because of the sound of its operation), became an indispensable tool for any serious speculator. The ticker provided a rapid, telegraphic link to the stock exchange and issued forth a steady stream of constantly updating prices using codes that had been specifically developed by the telegraph company data providers.

But as the ticker only provided a stock code and a price, a methodology was needed that would visually represent a stock's progression and provide an analysis of the constant flow of prices. By 1900, an elementary technique had been developed to chart the market's performance, namely Hoyle's 'point and figure' method that he published in his book *The Game in Wall Street: And How to Play it Successfully*.²¹⁰

²¹⁰ See: William Hoyle, *The Game in Wall Street: And How to Play it Successfully* (New York: J.S. Ogilvie Publishing Company, 1898).



Point and Figure chart (Source: Stockcharts.com)

The technique permitted the rises and falls in the prices of stocks to be abstracted and graphically represented as 'X's and 'O's in a series of stepped gradations which clearly revealed trend patterns.

Nearly a century later, by the 1990s and with the development of specialised market trading software, a range of sophisticated pictographic price and index charts became widely available, together with probability indicators that could be applied in conjunction with them. These graphic devices include moving averages of various time periods that weave across the charts. They are used to anticipate price movements' regression to the mean after sudden trend changes, whereby extreme price fluctuations can generally be expected to revert to the average distribution, depending on the short or long term parameters used. There are over thirty commonly used statistical indicators based on historical price movements. The complex algorithms of charting software rationalise and translate stochastic data into elegant diagrams illustrating probabilistic trajectories.



Stock chart showing Bollinger trading bands, volume, relative strength index, and moving average convergence/divergence indicators (Source: ProRealTime.com)

The most elementary and commonly used chart in trading is the *bar* chart. Trading bar charts represent the four key levels reached by a stock, a commodity or an index, for example. These demonstrate, over a given time period, an opening level or price; a high and low, and the closing level for that period. Time frames may be as long as yearly, monthly, or more conventionally weekly or daily. Shorter time frames, favoured by day traders for example, indicate levels or prices minute-by-minute or even ‘tick-by-tick’.²¹¹ The interpretation of bar charts is elementary, not revealing much beyond the four keys levels (open/high/low/close) and overall trends.

²¹¹ A ‘tick’ is a variation in value occurring with every bid and offer. A tick in stock trading is one cent, however, in currency trading a tick is as small as 1/100th of a cent. Tick changes can occur as rapidly as several times per second. With very large flows of capital, a one-tick change represents a substantial amount of money.



Bar chart showing support and resistance lines, trend lines and moving averages (Source: IG Markets)

The Japanese *Candlestick Method*, however, represents a more sophisticated and accurate indicator. Through changes in the colour and shape relationships of its pictograms, candlesticks signal at a glance the balance between supply and demand. They also reveal the strengths and weaknesses of trends within particular time frames, and provide indications of potential short, medium and long-term trend reversals. Although the *Candlestick Method* of charting has become a primary tool for most traders and is widely applied in Western technical analysis, neither a comprehensive history of the technique, whose origins were in feudal Japan, nor in-depth literature written in English, has been available until fairly recently.



Example of the same chart as above, using the *Candlestick Method*. The green candles represent days where the closing price is higher than the opening price; the red candles indicate the opposite (Source: IG Markets)

Senior technical analyst at Merrill Lynch investment bank, Steven Nison, published the first comprehensive book on the *Candlestick Method* after extensive research in the 1990s.²¹² Based on the translation of a repository of Japanese texts, Nison's study has thrown light on the origins of a technique about which little had been known.

The *Candlestick Method* was used to illustrate the fluctuating share price of the Newcrest Mining Company in the project *NCM open/high/low/close*, and was applied to determine trading strategy in *catchingafallingknife.com*.

iii. A Brief History of the *Candlestick Method*

The origins of technical analysis can be dated to the Japanese trade in rice during the Edo Period (1600-1867). This period followed a century of internecine warfare between Japan's feudal lords, finally settled with the ascendancy of Tokugawa Ieyasu at the battle of Sekigahara in 1600. As Shogun of Japan, Tokugawa wished to maintain control over the feudal lords,

²¹² Steve Nison, *Japanese Candlestick Charting Techniques* (2nd Edition) (Paramus NJ: New York Institute of Finance, an imprint of Prentice Hall Press, 2001).
See: also: *Beyond Candlesticks: New Japanese Charting Techniques Revealed* (New York: John Wiley & Sons, Inc., 1994).

the *daimyo*. He arranged for them and their families to live close to the imperial palace in Edo (Tokyo). In this manner, when the lords travelled to their respective provinces, their families remained behind as virtual hostages. The main source of income of the *daimyo* was rice, which was gathered as a tax from the peasants working their land in the provinces. Based in Edo, the *daimyo* established a central rice depot in the port of Osaka. As the trade in rice with Edo grew, Osaka also developed as Japan's major centre of trade and commerce.

By the late 1600s an institutionalised market known as the Dojima Rice Exchange had been established. The rice issuing from this exchange was distributed both locally and nationally. Surplus rice could be deposited and the exchange would issue a receipt, or coupon. These coupons could then be sold as redeemable for cash. In order to provide credit for *daimyos* needing immediate liquid assets, a system was developed whereby future years' harvests could be mortgaged and redeemable contracts issued. These were known as 'empty rice' contracts²¹³ in that the value of the contract was based, not on ownership of the physical commodity, but on the promise to deliver that commodity at an agreed future date. The abstract notion of these contracts allowed them to be traded or speculated against the fluctuating consensus value of rice at any point along its lifespan. This was the beginning of the world's first futures market. By the mid 18th century, rice futures had become so established an instrument for speculation that of the 110,000 rice bales traded annually as futures contracts in Japan, only 30,000 bales existed as physical entities.²¹⁴

During this period, the methodology of tracking rice futures prices based on technical analysis was refined. The acknowledged master of the technique was Munehisa Homma. Through his assiduous tracking of fluctuating rice futures prices Homma developed theories of repetitive price patterns which provided insights into traders' sentiments and historic price moves based on

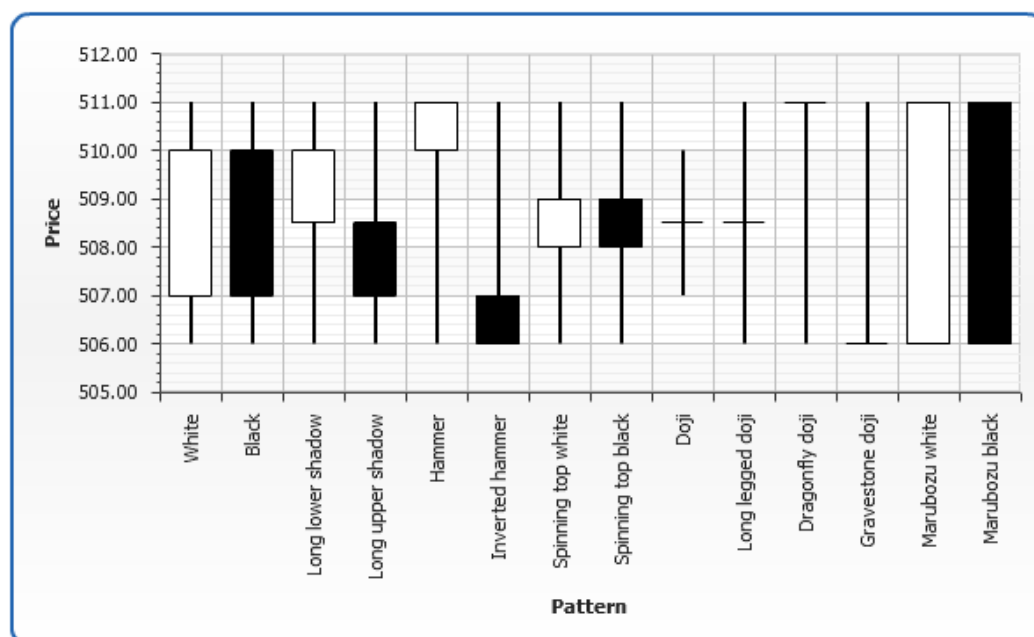
²¹³ Ibid., 14.

²¹⁴ John Needham, *Samurai Trader: Homage to Homma*, <http://www.financialsensearchive.com/asia/danielcode/2008/0120.html> (accessed: 30/09/10).

seasonal fluctuations. Homma collated his observations and named them the *Sakata Rules* (after the port city in which he was born). Based on the interpretation of patterns and sequences it was essentially this analysis, refined in the late 1800s Meiji period, that developed into the contemporary technical analysis tool known as the *Candlestick Method*.²¹⁵

Nison points out that the recognisable form of candlesticks was not Homma's innovation alone, but more likely to be the result of an evolution of a number of traders' adaptations. Nison comments: 'Even if he did not invent candle charts, Homma understood that the psychological aspect of the market was critical [...] And it appears that the earliest forms of technical analysis in Japan dealt more with the psychology of the market rather than charts.'²¹⁶

iv. The *Candlestick Method*: a System of Signs



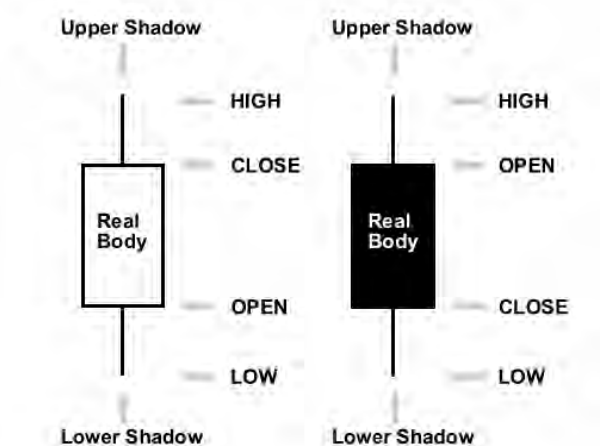
The construction of the individual candlestick pictogram elegantly and simply represents price over a predetermined period of time. However, it is the relationship between these price values and the patterns they form that is the key to locating and interpreting opportunities to apply trading strategies. First, it is necessary to understand the basic signals given by the candlestick itself.

²¹⁵ Nison op. cit., 14.

²¹⁶ Ibid.

The candlesticks bear a resemblance to the pictographic characters of Japanese script known as *kanji*. These have their origins in Chinese script characters dating to the 14th century BCE.²¹⁷ The candlestick is so named because its individual elements resemble a candle with a wick. The wick can project downwards or upwards, or in both directions from a solid body. The candlestick is basically a pictogram consisting of a rectangular section called the *real body* (*jittai*) and two thin lines above and below this section. The real body represents the range between the opening and closing levels of the chosen timeframe (for example, minute-by-minute, day-by-day, week-by-week, etc.). Traditionally this section is filled in either white or black, although the contemporary digital convention in most programs is green and red. A white (or green) *real body* represents a period where the closing level is higher than the opening level. This would indicate that a stock's price has risen over this period. A black (or red) *real body* indicates that the closing level is lower than at opening, indicating that the price has dropped for that period.

友



The thin lines that project above and below the real body are known as the *shadows* (*kage*). Both shadows represent the extremes of that particular trading session, the upper extreme being the high, and the lower extreme representing the low for that session. The relationship between the real body

²¹⁷ See: Wolfgang Hadamitzky and Mark Spahn, *Kanji and Kana: A Handbook of the Japanese Writing System* (Boston, Tokyo Tuttle Publishing, 2000).

and the shadows of a candlestick clearly illustrates the relationship between supply and demand – between the ‘bulls’ and the ‘bears’. The major initial indicators displayed by the candlestick are its size and colour. The taller the real body of the candle, the stronger the momentum between the open and the close. A tall white body indicates that the bulls are in control – a buyer’s market; the opposite is true for a tall black candle. However, a short real body indicates a lack of momentum and that there has not been much change between the opening and closing price for the chosen timeframe. This shows that the bulls and the bears are locked in an even contest: there is a temporary agreement that fair value has been reached, or that supply and demand has evened out.

Trading opportunities emerge when prices begin to confirm historical support and resistance levels. In the former, prices usually pause for a period of time before advancing, and in the latter, prices pause before retreating. Trading strategies are concerned with identifying particular configurations, or constellations, of candlesticks at these key levels, where advantage can be taken of imminent reversals, breakouts, or momentum continuations. Combinations of candlesticks also provide an indication of overall market sentiment – the sentiment of its constituent players.



(Source: IG Markets)

There are many candlestick patterns, and examples of some of those that most frequently appear will be illustrated here to demonstrate how their poetic descriptors can be interpreted, and how trading strategies can be applied to them. Important single candlesticks are given names that describe their appearance, and significant configurations of candlesticks are described using poetic metaphors. The former might incorporate everyday elements, for example, the *hammer (tonkachi)* candlestick, occurring after a protracted downtrend, indicates that the market is possibly *hammering out a base*, and that a change towards a more positive market sentiment might be imminent. The psychology behind the appearance of the *hammer* indicates that there are enough buyers in the market to propel the price strongly off its low. In technical terms, on a daily candlestick chart for example, this pictogram resembles a hammer in that the opening and the closing price is very close to the intraday high and far from the intraday low. This indicates that the price came under significant selling pressure, but recovered substantially to end the day positively. The intraday low might then represent a bullish reversal point in the trend.



(Source: IG Markets)

Weather analogies are also evident in candlestick patterns. *Dark cloud cover (kabuse)* comprises a solid-bodied black candle occurring during an upward trending market, preceded by a large-bodied white candle. This indicates



the possibility that the market is being 'covered' by negative sentiment and that it is unlikely that prices will advance further in the immediate future. Technically, on a daily chart for example, the white candle indicates continuing positive buying sentiment with the closing price significantly higher than that at the opening. However, a subsequent black candle with the opening higher (in accordance with the uptrend), but with the closing price significantly lower than the opening, suggests that buying sentiment is on the wane and a trend reversal is possible.



(Source: IG Markets)

Candlesticks with narrow real bodies are often read as indicators of reversals when read in conjunction with a preceding and a succeeding candlestick. Such a pictogram appearing at the bottom of a downtrend with a higher preceding and succeeding candle is known as the *morning star* (*sankawa ake no myojyo*).





(Source: IG Markets)

Confirmation of this bullish or optimistic configuration is believed to signal an uptrend reversal. At the opposite end of the scale, a similar candle appearing at the top of an uptrend and preceded and succeeded by a candle at lower levels is called the *evening star* (*sankawa yoi no myojyo*), with a confirmation of the pattern suggesting a quieting of the bullish spirit.



(Source: IG Markets)

The *Candlestick Method* has become prevalent in contemporary western technical analysis. However, in day-to-day application, interpretation has been divested of all but a few of the poetic references described in the preceding

examples.²¹⁸ While trend, support and resistance levels are clearly observable, the white (green) or black (red) bodies are now simply referred to as either 'up' or 'down' days. In its traditional application, the metaphoric attributes of candlesticks, such as the *dark cloud cover* and the *morning star*, clearly display a resonance with Shinto, the Japanese way of the divine, or way of the *kami*.²¹⁹ *Kami* are mythological gods that can emerge from either object or human forms, but can also be referred to as the essence of natural phenomena that the Japanese 'believed were endowed with an aura of divinity [...] Rocks, rivers, trees, places, and even people can be said to possess the nature of *kami*.'²²⁰

In the early writings on the *Candlestick Method* that Nison uncovered, overall market factors could also be described in poetic terms. For example, the momentum within trends and the resulting effects on prices were 'as clouds to the wind, and winds to the blossom'.²²¹ The *Candlestick Method* also contains allusions to the martial arts. Nison offers a number of military analogies discovered in the original texts. For example: 'Action that ignores the condition of the market is only asking for a loss and an ambush encounter', and, 'An army manages its victory in accordance with the situation of the enemy ... The market is a tug of war where the strategy is to overrun the enemy territory ... In a tug of war, once the balance of power is lost, one side is pulled and the result is decided.'²²²

With the rhetoric of war so readily matched to that of financial markets, it is not unsurprising that Sun Tzu's 6th century BCE treatise on military strategy, *The Art of War*, has become an iconic handbook for contemporary traders. This is evidenced by the number of trading websites and publications devoted to the English translation of the book²²³, and popular manifestations of the

²¹⁸ Further examples of candlestick patterns are illustrated in Appendix 1.

²¹⁹ Stuart D.B. Picken, *Essentials of Shinto: an Analytic Guide to Principal Teachings* (Westport, Connecticut; London: Greenwood Press, 1994), xxi.

²²⁰ *Ibid.*, xxii.

²²¹ Nison op. cit., 137.

²²² *Ibid.*, 153.

²²³ See: Sun Tzu, *The Art of War*, trans. Lionel Giles (London; Shanghai: Luzac and Company, 1910). See also: *Trading is War, Prepare your Weapons*: <http://www.straightstocks.com/investing-lessons/sun-tzu-s-art-of-war-and-the-art-of-trading/> (accessed: 1/10/10); www.thecrosshairstrader.com (accessed: 1/10/10); and

Dean Lundell, *Sun Tzu's Art of War for Traders and Investors* (New York: McGraw Hill, 1997).

figure of the speculator appearing in movies such as *Wall Street* (1987) in which Gordon Gekko ('greed is good'), exclaims: 'I don't throw darts at a board. I bet on sure things. Read Sun Tzu, The Art of War. Every battle is won before it is ever fought.'²²⁴

²²⁴ Oliver Stone, Director, *Wall Street* (20th Century Fox), 1987.

Chapter 5: Global Flows

i. Terror, Paranoia and the Market

In *The Spirit of Terrorism*, published in 2002 just before the ‘Shock and Awe’ invasion of Iraq, Baudrillard asked: ‘How do things stand with the real event then, if reality is everywhere infiltrated by images, virtuality and fiction?’²²⁵

Baudrillard was referring to the observation of global events transmitted, often in real-time, on cable news channels and the Internet. He suggested that, ‘When an event and the broadcasting of that event in real-time are too close together, the event is rendered undecidable and virtual’.²²⁶

In February of the same year, U.S. Secretary of Defense Donald Rumsfeld, in a Defense Department press briefing, effectively rendered as ‘undecidable and virtual’ the alleged satellite image evidence of Iraq’s manufacture of weapons of mass destruction. He declared in his now famous reality-bending koan that:

Reports that say that something hasn’t happened are always interesting to me, because as we know, there are “known knowns”. There are things we know we know. We also know there are “known unknowns”. That is to say we know there are some things we do not know. But there are also “unknown unknowns”, the ones we don’t know we don’t know.²²⁷

Dealing with ‘unknown unknowns’ is a task familiar to the U.S. Department of Defense. In 1958, at the height of the Cold War, the department established the *Advanced Research Projects Agency*, later to be known as the *Defense Advanced Research Projects Agency* (DARPA). The initiative was a response to the launching of the first orbital space satellite by the USSR, when the Soviet’s technological competitiveness was perceived by the U.S. as a military threat. DARPA’s mission was (and remains) to ‘maintain the technological

²²⁵ Baudrillard, *The Spirit of Terrorism*, op.cit., 27.

²²⁶ Baudrillard, *The Intelligence of Evil*, op.cit., 75.

²²⁷ <http://www.defense.gov/transcripts/transcript.aspx?transcriptid=2636> (accessed: 2/10/10).

superiority of the U.S. military and prevent technological surprise from harming [the U.S.] national security.²²⁸

The agency has been credited with the technological developments that led to the advent of the Internet, originally conceived as an *intranet* to allow the Department of Defense to coordinate resources and military responses across the country in the event of nuclear attack. According to DARPA's mission statement, current research ranges from 'scientific investigations in a laboratory, to constructing full-scale prototypes of military systems'. The agency also funds 'research in biology, medicine, computer science, chemistry, physics, engineering, mathematics, material sciences, social sciences [and] neuroscience'.²²⁹ According to Robert Looney, Professor of Economics in the Department of National Security Affairs at the U.S. Naval Postgraduate School, DARPA also supports the 'development of advanced computer systems capable of scanning commercial databases containing information on millions of Americans'.²³⁰

Within its remit of conducting research into national security, one of DARPA's intentions is to harness the vigilance of U.S. citizens as an early warning system. This is often achieved by the staging of community games and competitions, the aim of which is to establish countrywide surveillance. In December 2009, DARPA used the 40th anniversary of the development of the Internet to launch the *DARPA Network Challenge* to test the efficiency of the Web as a potential surveillance system. Ten high-visibility weather balloons were tethered to unpublicised sites across the U.S., with participating teams challenged to precisely locate the balloons using social networking sites as a communications device. A team from the Massachusetts Institute of Technology won the US\$40,000 prize by identifying the locations of the balloons in the shortest possible time – less than nine hours.²³¹

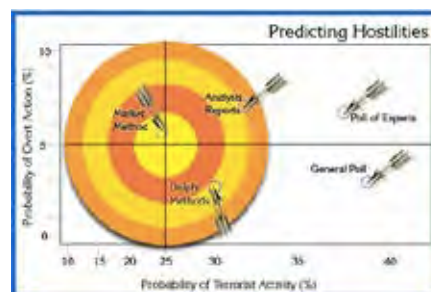
²²⁸ <http://www.darpa.mil/about.html> (accessed: 2/10/10).

²²⁹ Ibid. This has included research into a stimulant ('Go Pills') that would keep soldiers awake and alert for seven days straight. See: <http://www.globalsecurity.org/org/news/2003/030103-speed01.htm> (accessed: 2/10/10).

²³⁰ See: Robert Looney, 'DARPA's Policy Analysis Market for Intelligence: Outside the Box or Off the Wall?', in *Strategic Insights*, Volume II, Issue 9 (September 2003), http://www.au.af.mil/au/awc/awcgate/nps/pam/si_pam.htm (accessed: 2/10/10).

²³¹ See: <https://networkchallenge.darpa.mil/Default.aspx> (accessed: 26/03/11).

Since the events of 11 September 2001, DARPA's efforts have focused on potential international terrorist threats to national security. In July 2003, the agency launched its *Policy Analysis Market* (PAM). The ill-fated project proposed the establishment of a prototype futures-trading website whereby speculators could bet on a range of possible international events such as the assassination of a world leader, or regime changes in the Middle East. In theory the futures market would achieve a moving average equilibrium, where sudden spikes of buying could theoretically reveal a heightened probability of such events actually occurring. The motivation for establishing a predictive market was based on alleged evidence of a sudden increase in the short-selling of airline stocks just prior to the 9/11 attacks.



(Source: <http://www.iwar.org.uk/news-archive/tia/futuremap-program.htm>)

As Michael C. Ruppert – founder and editor of *From The Wilderness* a newsletter and website dedicated to investigating political cover-ups – explains in his book *Crossing the Rubicon: The Decline of the American Empire at the End of the Age of Oil*: ‘Although uniformly ignored by the mainstream U.S. media, there is abundant evidence that a number of transactions in financial markets indicated specific (criminal) foreknowledge of the September 11 attacks on the World Trade Center and the Pentagon’.²³²

Ruppert claims that senior members of global intelligence services, the CIA among them, had prior knowledge of the intended attacks on the World Trade Centre. He infers that parties with knowledge of the intended attacks bought a significant number of ‘put options’ in American Airlines in the days prior to the planes crashing into the twin towers, betting on the price of the stock price falling. Ruppert regarded it as highly suspicious that the brokerage firm used

²³² Michael C. Ruppert, *Crossing the Rubicon: The Decline of the American Empire at the End of the Age of Oil* (Gabriola BC: New Society Publishers, 2004), 245.

to transact the purchase was, until 1998, managed by the individual who went on to serve as one of the executive directors of the CIA between 2001 and 2004.²³³

Ruppert supports his claims by citing a report appearing on 21 September 2001 in the *Herzliya International Policy Institute for Counterterrorism* in Israel. The report, titled 'Black Tuesday: The World's Largest Insider Trading Scam?' documents evidence of a trail of suspicious trades in put options²³⁴ taken out against American Airlines. The report claims that:

Between September 6 and 7, the Chicago Board Options Exchange saw purchases of 4,744 put options on United Airlines, but only 396 call options ... On September 10, 4,516 put options on American Airlines were bought on the Chicago Exchange, compared to only 748 calls. There was no news to justify this imbalance ... The levels of put options purchased above were more than six times higher than normal. No similar trading in other airlines occurred.²³⁵

In 2003 DARPA, noting these events, proposed that the creation of a futures market 'would have provided the U.S. intelligence agencies access to a wide variety of markets in various events'.²³⁶ For example, petroleum futures, the market concerned with the price of that commodity for delivery at an agreed future date, has proven to be a reasonably accurate barometer of major political upheavals, particularly in the Middle East and other major oil-producing countries. The rationale is that market prices reflecting the sentiments of a large number of speculators would constitute a collective intelligence. For example, petroleum futures prices fell with the decisive events signalling the commencement of the Iraq war. However, when it became apparent that the Iraqi regime was going to be more difficult to remove than first thought, petroleum futures rose again. According to Leigh et

²³³ A.B. "Buzzy" Krongard.

²³⁴ Put options are based on the price of a stock falling; call options are based on a rising price.

²³⁵ Ruppert op. cit., pp. 246-249. The report continues: 'On the Chicago Exchange in the days immediately preceding Black Tuesday, Morgan Dean Stanley Witter & Co., which occupied 22 floors of the World Trade Center, saw 2,157 of its October \$45 put options bought in the three trading days before Black Tuesday; this compares to an average of 27 contracts per day before September 6. Morgan Stanley's share price fell from \$48.90 to \$42.50 in the aftermath of the attacks. Merrill Lynch & Co., with headquarters near the Twin Towers, saw 12,215 October \$45 put options bought in the four trading days before the attacks; the previous average volume in those shares had been 252 contracts per day. When trading resumed, Merrill's shares fell from \$46.88 to \$41.50.'

²³⁶ Looney op. cit., 1.

al, cited in Ruppert, prior to the commencement of hostilities oil prices reached highs suggesting that ‘there was a very high probability of conflict’.²³⁷

To support its PAM proposal, DARPA subscribed to the efficient market hypothesis, which many economists and academics, particularly in the 1980s, believed to be an accurate reflection of information affecting financial markets. As discussed above, the theory purports that market prices at any point in time reflect the entirety of information that could be known about the market to all investors at that time. Hence, the performance of PAM futures prices would similarly reflect what is known about its specific areas of interest. Initially PAM was to be focused on potential political, economic, civil and military eventualities of the major Middle Eastern countries. As Looney states: ‘A typical bet would involve issues such as whether the United States would pull its troops out of Saudi Arabia, or whether the Egyptian currency was likely to fall by 20% by the end of 2003’.²³⁸



Prototype PAM futures trading platform
(Source: <http://www.worldchanging.com/archives/003622.html>)

PAM’s futures contracts covered specially configured indices in the following interest areas:

- Quarterly contracts based on data indices that track economic health, civil stability, military disposition, and U.S. economic and military involvement in Egypt, Iran, Iraq, Israel, Jordan, Saudi Arabia, Syria and Turkey

²³⁷ Ibid.

²³⁸ Ibid., 2.

- Quarterly contracts tracking global economic and conflict indicators such as the likely occurrence of a regime change in Syria
- Specific possible events (e.g. U.S. recognition of Palestine in the first quarter of 2005)²³⁹

The PAM futures market had a very brief life, pulled from the Internet only one day after its launch, resulting in the resignation from DARPA of its initiator, Admiral John Poindexter (late of the Iran-Contra fiasco). The major resistance came from both academics and politicians accusing the scheme of being a waste of taxpayers' money and criticising its ghoulish nature. A further criticism cited the potential scenario of a trader taking out a 'likely assassination of a political figure' futures contract, and carrying out the deed to realise the profit. Events unrelated to PAM's interest areas but displaying similar characteristics, such as rumours of pending terrorist acts outside of the Middle East, could also cause significant price fluctuations.

However, the CIA even now maintains the viability of predictive markets such as PAM as having broad applications. A paper on prediction markets by international relations consultant Puong Fei Yeh, published on the CIA's website in 2007, details how wagering on the likely outcomes of future events, using financial futures market structures and methodologies, could improve on conventional approaches to strategic intelligence.²⁴⁰

As well as supporting his claim by referring to the efficient market hypothesis, Puong Fei Yeh also refers to the market hypothesis of economist and supporter of free-market capitalism, Friedrich Hayek (1898-1992), which maintained that market prices were an efficient mechanism for aggregating disparate information. Puong Fei Yeh quotes Hayek's claim that, 'The mere fact that there is one price for any commodity [...] brings about the solution which [...] might have been arrived at by one single mind possessing all the information which is, in fact, dispersed among all the people involved in the

²³⁹ Ibid.

²⁴⁰ See: Puong Fei Yeh, *Using Prediction Markets to Enhance U.S. Intelligence Capabilities: a Standard and Poors 500 Index for Intelligence*, <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol50no4/using-prediction-markets-to-enhance-us-intelligence-capabilities.html> (accessed: 3/10/10).

process'.²⁴¹ The paper offers an example of this process, citing an *American Economic Review* report that orange juice futures prices constituted better predictors of weather patterns than the U.S. National Weather Service's forecasts.²⁴²

On occasion U.S. Government attempts to predict politically sensitive events have resembled science fiction. The *Star Gate* program conducted by the CIA in the late Cold War years between the 1970s and early 1990s attempted to identify operatives within the agency who had psychic or precognitive abilities. The CIA sponsored experiments at the Stanford Research Institute in California, attempting to determine whether parapsychological phenomena (PSI), 'might have any utility for intelligence collection'.²⁴³

One of the Stanford studies focused on the technique of *Remote Predictive Viewing* (RPV) whereby an operative attempts to visualise and describe the physical elements of a remote location without having any prior knowledge of it. Early tests simply involved operatives trying to accurately describe objects hidden in boxes.²⁴⁴ Later experiments involved the placement of an operative functioning as a 'beacon' in a distant location, and having the subject describe where that agent had been situated. Experiments were conducted under scientific conditions using a double blind process where neither the subject nor those supervising the experiment were aware of the locations. A more sophisticated version of the experiment called *Coordinate Remote Viewing* entailed subjects being given only a geographic map coordinate – latitude and longitude in degrees, minutes and seconds – and asked to describe the location. The experiments, conducted under approximations of operational scenarios, were determined to have had some successes. One subject was reported as being able to draw details of the topography of a remote site, with its buildings and their interiors clearly depicted.²⁴⁵

²⁴¹ Ibid., 2.

²⁴² Ibid., 3.

²⁴³ H.E. Puthoff, 'CIA-initiated Remote Viewing Program at Sanford Research Institute', *Journal of Scientific Exploration*, Vol. 10, No.1, 1996, pp. 63-76.

See: http://www.scientificexploration.org/journal/jse_10_1_puthoff.pdf

²⁴⁴ Ibid., 4.

²⁴⁵ Ibid., 6.

Although the CIA's involvement in the experiments was curtailed as a result of Congressional criticism, researchers at the Stanford Research Institute remain supportive of their findings: 'Despite the ambiguities inherent in the type of exploration covered in these programs, the integrated results appear to provide unequivocal evidence of a human capacity to access events remote in space and time, however falteringly, by some cognitive process not yet understood.'²⁴⁶ ²⁴⁷

I adapted the RPV technique for the performance *Remote Predictive Viewing* at the Banff Centre, Alberta, Canada in September 2008.

ii. Cuba

The country that can arguably be described as having been the most consistent and vociferous critic of the West's capitalist economic model is Cuba. A perspective on this country is worth including as a counterpoint to the specific trajectory of financial capitalism that has been the main focus of this thesis. Research into the Cuban informal economy formed the basis of my 2009 Havana Biennale project, *The Force of Desire/The Force of Necessity*. This section will also include a reflection on the place of political critique amidst the commercial concerns of the international biennale phenomenon.

a. 'Homeland, Socialism or Death!'

The following gives a brief background to the present day Cuban socio-economic situation and focuses on the 1980s onwards, a period that coincided with the rampant development of financial capitalism in the West, in particular the United States. The revolutionary period, which saw the demise of Cuban dictator and U.S. sympathiser Fulgencio Batista and the emergence of Fidel Castro, is beyond the scope of this thesis, and will not be referred to in detail.

²⁴⁶ Ibid., 114.

²⁴⁷ Though achieving only the status of a pseudoscience, the technique of *Remote Predictive Viewing* was nevertheless adopted by the Australian Psychics Association in 2003 as the basis for a series of experiments attempting to predict price movements on the Australian Stock Exchange. See: full description on: <http://www.prvassociates.com/index.htm> (3/10/10).

Post-revolutionary Cuba has resolutely resisted the influences of capitalism, upholding what was presented to the world after Castro's revolution in 1956 as a viable socialist model. Even as Cuba's economy, agriculture and infrastructure crumbled with the withdrawal of Soviet support in the early 1990s, Castro remained tenaciously committed to his socialist ideals. Now, with Fidel Castro ailing and his brother Raoul endeavouring to shore up the legacy of *La Revolución*, Cuba has relied on tourism to provide for employment, infrastructure and its main source of foreign income.

Since taking over the presidency from his brother in 2006, Raoul Castro has initiated a number of reforms, many of which have been considered long overdue by critics of the government in Cuba and abroad. In mid-September 2010, Raoul Castro announced that Cuba would phase out half a million government positions – 10% of the total workforce – over the following six months, and encourage the development of independent small businesses to compensate for the resulting employment deficit.²⁴⁸

Fidel, while not opposing the limited changes to the economy, resisted any suggestion that the reforms were a sign of a softening attitude towards a free-market economy. On 10 September 2010, U.S. journalist Jeffrey Goldberg and analyst Julia Sweig reported that a statement Fidel had made on the launching of his second book on the revolution, *The Strategic Counteroffensive*, implied that the Cuban model no longer worked. Fidel was insistent on correcting the misconception, soon after stating in the *Havana Times*:

My idea, as everybody knows, is that the capitalist system does not work anymore either for the United States or the world, which jumps from one crisis into the next, and these are ever more serious, global and frequent and there is no way the world could escape from them. How could such a system work for a socialist country like Cuba?²⁴⁹

²⁴⁸ <http://abcnews.go.com/Business/wireStory?id=11632723> (accessed: 26/03/11).

²⁴⁹ <http://www.havanatimes.org/?p=29161> (accessed: 15/09/10).

Cuba's disavowal of the capitalist system was challenged in the late 1980s, not by any direct impact from the United States, but with the advent of Soviet president Mikhail Gorbachev's *perestroika* and *glasnost* reforms. According to Louis A. Pérez, writer on Cuban nationality and identity, the Soviet Union's 'restoration of private property, and the adoption of explicit earning differentials based on market differentials'²⁵⁰, were rejected by Fidel Castro as anathema to Cuban socialist ideals. Cubans were exhorted to reaffirm the communist imperatives of the revolution and to prepare for further struggle and sacrifice.

After twenty years of close cooperation, economic and military aid, the Soviet Union began a program of withdrawing its military staff from Cuba in accordance with a new policy of diminished global engagement. The detachment of Soviet support was confirmed with the dissolution of the Soviet Union in 1991 and the ultimate collapse of communism. Cuba found itself increasingly isolated. Thirty-five years of economic development in Cuba was suddenly threatened by the withdrawal of trade with socialist bloc countries. The country's energy reserves began to dwindle along with the delivery of Soviet oil and petroleum by-products, as did the supply of consumer goods, grains, and general foodstuffs. Cuba found that it was unable to secure supplies essential to the development and maintenance of industry and agriculture. The situation was exacerbated by an increase in the price of oil and a decrease in the price of sugar, which up until that time had been a primary export commodity.

With the radical curtailing of production came unemployment, which affected all Cubans, from shop employees to those in the state sector and military. Power outages lasting as long as 8 and 10 hours a day caused media production to slow, affecting the distribution of newspapers and television programs. Bad weather, vacillating between storms, hurricanes and drought during this time, added to the problems.

²⁵⁰ Louis A. Pérez, *Cuba: Between Reform and Revolution*, 4th ed. (New York: Oxford University Press, 2011), 291.

The Cuban Government announced the commencement of austerity measures that were collectively called the 'Special Period' (*período especial*), marked by the implementation of severe rationing of food and commodities. Everyday, commonplace consumables were at times unobtainable, despite the rationing system; essential services were stretched to breaking point and the country entered a period of dire deprivation.

Pérez evokes the widespread deprivations of the *Special Period* as:

... an apocalyptic premonition, especially in the cities: major urban thoroughfares and streets with virtually no automobile traffic; vast swathes of neighbourhoods enveloped nightly in total darkness without street lights, without lights from shops, houses and apartment buildings. An eerie silence descended upon suburban neighbourhoods in the evenings as the sights and sounds of the city so much associated with gasoline and electricity ceased.²⁵¹

Cubans adapted to the situation as best as they could. Those who wished to emigrate, – and *could* – did, mostly joining other expatriates in Miami less than 150km away across the Florida Straits. Others turned in growing numbers to religion. Patriotic Cubans firmly clinging to the ideals of *La Revolución* proudly proclaimed, 'Patria Socialismo O Muerte!' ('Homeland, Socialism, or Death!'), the slogan imprinting itself on the nation's psyche via city walls and billboards. Ingenuity became paramount to survival, and dealing on the informal or 'black' market became the norm.

The loss of the Soviet Union as a trading and aid partner left Cubans more vulnerable to the United States' efforts to isolate their nation. During the *Special Period*, U.S. trade sanctions were spearheaded by the *Torricelli Act* (also known as the *Cuba Democracy Act*), which denied ships carrying aid or supplies to Cuba access to U.S. ports, and also authorised the U.S. President to 'withhold economic assistance, debt relief, and free trade agreements with all countries that provided aid to Cuba'.²⁵²

²⁵¹ Ibid., 297.

²⁵² Ibid., 299.

In 1996 (a U.S. presidential election year), the Cuban air force shot down two civilian aircraft belonging to the Cuban-American organisation *Brothers to the Rescue*, claiming that the island's airspace had been violated and illegal leaflets dropped on Cuban soil. The U.S. retaliated, with President Clinton signing into law the *Helms-Burton Act* (also known as the *Cuban Liberty and Democratic Solidarity Act*).

Expressed in the Act's many provisions was the intention of the U.S. authorities to penalise foreign companies, governments, and lending institutions that conducted business with, or provided aid to Cuba. In addition, the *Helms-Burton Act* was to remain in place until Cuba had made progress towards a 'democratically elected government' and had instituted a 'market-oriented economic system'.²⁵³ Castro rejected the Act and declared: 'Ours is the only socialist country in the West ... We are alone – all alone – here, in this ocean of capitalism that surrounds us.'²⁵⁴

In attempting to ameliorate the dire economic situation, Cuba aggressively sought new trading partners, finding these in some measure in China, North Korea and Vietnam, certain Islamic countries, and Latin America, more specifically, Venezuela.

The Cuban Government brought about a degree of change in terms of revising certain restrictive policies. Included amongst these, the decriminalisation of possession of the U.S. dollar. Indeed, new state-run shops such as retail outlets and restaurants were established offering a limited range of consumer products and services that could only be purchased with U.S. dollars. It was hoped that dollar remittances to Cubans by relatives living overseas would provide a flow of U.S. hard currency into the country.

However, those without access to dollars would find *La Lucha* ('The Struggle') exacerbated as they found themselves excluded from the dwindling pool of consumer products. The fluctuating value of the Cuban peso and the fact that fewer basic necessities could be purchased with pesos created what was in

²⁵³ Ibid., 300.

²⁵⁴ Ibid., 303.

effect an underclass, with its members becoming entirely dependent on government-issued rations.

There were, however, major changes instituted with regard to the stimulation of enterprise through the authorisation of self-employment. By the mid to late 1990s there was a proliferation of backyard mechanics, artisans and even artists selling their work and services directly to the public. Private houses were able to function as restaurants (*paladares*), serving up to 12 guests. Rooms in houses (*casas particulares*) could be rented to tourists. These enterprises were rigidly regulated, representing significant taxable income for the government. In an attempt to increase the production of food, two-thirds of state-owned land was redistributed to co-operatives and private farmers.

By the turn of the century it appeared that Cuba had adopted a pragmatic approach to see its way through the *Special Period*. Flaunting U.S. pressure, joint ventures with foreign companies grew apace. The desirability of the island as a tourist destination was rediscovered with an enthusiasm unprecedented since the heady days when, in the years prior to Castro's revolution, the Miami mafia, Hemingway, U.S. politicians, and Hollywood stars frequented the island. A vigorous hotel building program was established, usually as joint ventures with foreign, mainly Spanish, hotel groups.

Tourism rapidly became Cuba's primary industry with visitor numbers increasing each year, the majority flying in from Canada, Spain, Italy, France, Germany and England.²⁵⁵ Although the burgeoning industry has created significant employment for many Cubans, the vast majority had no access to this dollar economy, and all but a few had access to the tourist enclaves. The resorts, even today, are like isolated islands in themselves, with most food and beverages specially imported for the tourists.

With the mass circulation of the U.S. greenback, it was inevitable that the value of the Cuban peso would in time be pegged to the dollar, and inevitable too, that in terms of buying power, it would rapidly devalue. An average

²⁵⁵ Ibid., 309.

See: also: <http://www.onecaribbean.org/content/files/july21Lattab09.pdf> (accessed: 17/03/11).

monthly salary received in *pesos* would only be worth 5% as much in the dollar economy of the 1990s.²⁵⁶

Despite Castro's socialist avowal to the contrary, a market economy has emerged in Cuba. Where the purchasing power of *pesos* failed, and access to the dollar was limited, an informal economy has provided a sustainable platform for exchange. The most visible manifestation of this 'black market' is known as *jineterismo* (literally meaning 'horse-back riding'). *Jineteros* (m.) and *jineteras* (f.) comprise the subculture of individuals who attempt to access the tourist economy and its desirable currency through hustling by various means. This essentially street-level activity takes the form, for example, of offering cigars for sale (most often cheap imitations of well-known Cuban brands), touting reservations at local restaurants (on a commission basis), providing tourist guides – or at its infamous worst, propositioning for sex.

The dollar economy was phased out as Cuba unsuccessfully sought avenues through the U.S. sanctions to renew the growing number of no longer serviceable, use-worn bills in circulation. In November 2004, the dollar was declared illegal tender and the Cuban Central Bank began circulating the newly minted *convertible peso* (known as the CUC), which tourists and other foreigners were then required to use instead of American currency. The CUC was pegged to equal the dollar in value, with all transactions in the latter currency attracting a 10% surcharge. State-operated stores, restaurants and tourist facilities ceased accepting the dollar, and CUC foreign currency exchange was encouraged in euros, sterling and Canadian dollars.

The emerging market opportunities in Cuba did not escape the enterprising eyes of American business interests. In 1997, the *USA*Engage*²⁵⁷ organisation was established by a 400 strong group of U.S. corporations, including *AT&T*, *Boeing*, *Exxon*, *Citibank*, *Procter & Gamble*, and *PepsiCo*. One of the organisation's main aims is to lobby U.S. Congress to relax the trade sanctions against Cuba and, by promoting the expansion of a free-

²⁵⁶ Pérez op. cit., 310.

²⁵⁷ See: <http://www.usaengage.org/index.php> (accessed: 27/10/10).

market economy to that country, 'raise living standards [as] crucial ingredients of political freedom and respect for human rights'.²⁵⁸

b. The Biennale Effect

The *Bienal de La Habana* was inaugurated in 1984, conceived in part as a promotion through cultural exchange, of Castro's brand of anti-imperialism and cultural idealism. Of necessity, any history of the *Bienal* must take into account its complex trajectory, bound up in the tempestuous history of Cuba; from the mid-eighties era of a Soviet-subsidised economy and grand cultural ideals – expressed in 1986 by Minister of Culture, Armando Hart as 'a grand force of union of the values and common interests of Third World art'²⁵⁹ – to the grim days of the Soviet withdrawal and economic breakdown of Cuba that ended the decade and led to the *Special Period*.

Its initial editions served as a counterpoint to mainstream cultural discourse and aesthetics, and as a critique of the rampant commercialism of the international art world, but in the new millennium, the *Bienal* looked more actively beyond its own shores, inevitably to be affected by the global social and economic events precipitated by the dissolution of the Soviet Union. As part of the Cuban Government's recognition of the need to portray the country as an attractive destination for tourists and a prospect for economic investment, cultural events have assumed a significant role in the country's development. By the seventh *Bienal* of 2000 it was acknowledged by the President of the National Council for the Plastic Arts that the event served as 'a backdrop for tourism'²⁶⁰, attracting for the first time over two thousand international visitors. But the inclusion of the *Bienal* into the international fold was not to be without obstacles. In 2003, the *Bienal's* principal European sponsors withdrew their funding in response to a major Cuban Government crackdown in which a number of political dissidents were imprisoned. The fact that the *Bienal* today remains a government-run event is significant, and its

²⁵⁸ At the time of writing, even though the U.S. Administration had indicated an interest in reevaluating foreign policy regarding Cuba, none of these *USA*Engage* companies had managed to implement their 'well-intentioned' economic aid. Cuba remains in a period of difficult transition from revolutionary austerity to uneasy proto free-market expediency.

²⁵⁹ *Ibid.*, 20.

²⁶⁰ *Ibid.*, 17.

curators are essentially government officials. Thus, especially younger Cuban artists looking to voice their social and political ideas (over and above the essentially aesthetic and poetic considerations of the earlier *bienals*) are inevitably going to encounter resistance to their freedom of expression.

On the international biennale circuit, as with the Olympics, the significant investment in such events requires the showcasing of not only cultural and sporting achievements, but the host country's civic development and tourism potential as well. Recent biennales have been the source of as much criticism as praise. It is now common to regard these events as 'cultural tourism', with positive commercial returns having become a significant factor in determining their overall success or failure.

Addressing this issue, the *City Breaks? Art and Culture in Times of Expediency* conference held at the 2006 Liverpool Biennial, posed the following questions:

Is it possible to square demands of city marketing and cultural tourism with an urgent engagement with issues of citizenship, communities [and] dissensus? [...] How can we constitute a bifocal perspective allowing us to examine the visual regime of capitalist consumption and the immanent meaning of art and social practices at the same time? Does the desire of the visual relegate dialogical practices [with regard to] the conditions posed by the exhibition format? How do large popular exhibitions such as Biennials negotiate the difference between art as performance and art as competence?²⁶¹

In the practical reality of global biennales, the responsibility for this negotiation is often wrested from the artist's control and even the aegis of the curator. Original intention and contextual relevance of artworks may well go through a transformation as the result of their collision with the event's marketing strategies. Like much of the edgy, boundary-challenging work that is so often consumed by commercial interests, even art that is intended to be critical of the very institution of the biennale is transformed into spectacular

²⁶¹ www.artinliverpool.com/moreinfo/oct06/CityBreaks.doc, press release citing George Yúdice in *The expediency of culture: uses of culture in the global era* (Durham: Duke University Press, 2003).

entertainment, running the risk of being defused and rendered ineffectual within its own showcase.

The work of Spanish artist Santiago Sierra is a case in point. His provocative and controversial installations have involved gangs of labourers paid the minimum wage to perform menial tasks in the gallery, or submitting themselves to degrading scenarios such as having a line tattooed on their backs, or masturbating in front of a camera. Sierra's controversial work aims to make visible the inequitable power relations inherent in the exploitation of labour under the capitalist system. He has proven to be a particular favourite with curators in Venice, where his work has been included in three successive editions of the Biennale, starting in 2001. Curating the Spanish Pavilion, Rosa Martínez included Sierra in 2003, and again in 2005 when she served as co-curator.

In 2001 Sierra paid 200 African immigrant men, drawn from the ranks of informal salesmen plying their trade in the Piazza San Marco, to dye their hair blond. In 2003 he bricked up the entrance to the Spanish Pavilion, permitting admission only to Spanish passport-holders, and then only through a back door.

In the 2005 edition, Sierra's installation featured only a disembodied voice intoning an inventory of costs related to the production of the Biennale, including the salaries of each successive artistic director and minutiae such as the price of a glass of wine during each year of the event's 110-year history. By bringing attention to the accounting books, the work forced an acknowledgement of the steady encroachment of commercial concerns on the event. For example that year, curator Martínez' budget was threatened with cuts and she had no alternative but to accept the placing of Biennale sponsor Illy Café's coffee-tasting carts throughout the exhibition venues.²⁶²

With its history rooted in socialist ideals, the *Bienal de La Habana* claims to provide a viable alternative model to the commercialism of Venice by

²⁶² See: Augustine Zenakos, 'Talking a Little Further', Artnet, <http://www.artnet.com/magazineus/features/zenakos/zenakos8-2-05.asp> (accessed: 13/10/10).

acknowledging on the one hand art's aesthetic traditions and legacies, and on the other, the responsibility of the event to address social issues. Recent Havana biennales, in addition to functioning as showcases for Cuban art and culture, have also attempted to provide a modicum of dissenting political expression denied most resident Cubans since the revolution. The public airing in the *Bienal* of opposition to Castro and his government has been tolerated to a degree by the authorities in order to maintain the critical integrity of the event on the international circuit, and as an attempt to establish Cuba as a member of a global egalitarian community.

The 10th *Bienal de La Habana* in 2009 was imbued with a particular significance. It was the year of the fiftieth anniversary of the revolution. Despite the accompanying celebrations, the *Bienal's* premier venue, La Cabaña fortress (*Fortaleza de San Carlos de la Cabaña*), on the eastern side of Havana's harbour entrance, was not without the taint of bloodshed given its history in the unfolding of Castro's revolution. Though not acknowledged in any catalogue statement or tourist brochure, the fortress was the site of the post-revolution tribunals, where the crimes of the Batista Government were investigated and the perpetrators of earlier injustices punished. Punishment took the form of either lengthy prison sentences, or death by firing squad.

According to José Vilasuso, a lawyer who worked under Ernesto 'Ché' Guevara in the preparation of indictments that often resulted in the death sentence during the first months of the Communist government in 1959:

... the Appeals Tribunal never decided in favor of the appeal. It simply confirmed the sentences. It was presided over by Commander Ernesto Guevara. Executions took place from Monday to Saturday, and each day about one to seven prisoners were executed, sometimes more. Death sentence cases had a blanket authorization of Fidel, Raul and Ché, and were decided by the Tribunal or by the Communist Party ... in La Cabaña, until June of 1959, about six hundred prisoners were executed, plus an indefinite number of prison sentences.²⁶³

²⁶³ See: José Vilasuso, 'Executions at 'La Cabaña' fortress under Ernesto 'Ché' Guevara', *Witness to Persecution*, Montclair University, <http://chss.montclair.edu/witness/LaCabana.html> (accessed:

Rumour has it that the pock-marked execution walls in the fortress have been retained for posterity but hidden from public view, unlike the bullet holes clearly evident in the former presidential palace²⁶⁴ – the result of the fierce fighting that unseated Batista and his government.

For a non-Cuban reader political issues, and *La Lucha* ('the struggle'), were conspicuously absent from mention in the hefty 10th *Bienal* catalogue. Favours a more global outlook, *Bienal* Director, Rubèn del Valle Lantaron wrote:

The theme, *Integration and Resistance in the Global Era* [...] acquires a dramatic quality and perhaps even greater appropriateness in the face of the worsening of the financial disaster being endured by the planet, which has affected all nations one way or another.²⁶⁵

Lantaron's reference to the global financial crisis – the product of capitalist speculation in the West, and arguably having few immediate implications for Cuba – seemed outrageous in the face of the country's years of financial deprivation.

The need to address Cuba's own social inequities revealed no local dissident voices in the *Bienal* program, with the notable exception of Tania Bruguera, an artist who lives and works between Havana and Chicago. Bruguera has worked previously with young artists in Cuba, encouraging them to address their social and political realities, and is no stranger to censorship. Interpreted as being critical of Castro, her installation in the 2001 *Bienal de La Habana* was closed by the authorities. As the *Bienal* is dependent on government funding, it becomes problematic for the curators to promote or condone work that might be critical of the government.

The 2009 *Bienal* was the recipient of significant funding from Spain in the form of logistical and promotional support, and as such, not entirely dependent on the government as in previous years. With this outside support, perhaps the

23/11/10).

²⁶⁴ Now the Museum of the Revolution (*Museo de la Revolución*).

²⁶⁵ *Décima Bienal de La Habana 2009* (Sevilla, Spain: Escandón Empresores, 2009), 19.

government-appointed curators felt more confident to once again feature Bruguera's provocative work.

In a performance staged shortly after the official *Bienal* opening, Bruguera set up a podium equipped with microphones in the central courtyard of the *Bienal* offices. Two hundred disposable cameras were distributed to a packed house, and the crowd was told that anyone mounting the podium would have 'freedom of speech for one minute'.²⁶⁶ A number of audience members took the opportunity to make statements, while one of Bruguera's assistants, dressed in army fatigues, placed a white dove on their shoulders reprising the moment when, during Castro's acclaimed post-revolutionary speech in 1959, a white dove was reputed to have settled on his shoulder. The number of speakers was estimated at around forty, eager to voice both criticism of and support for the government. One of the notable voices was that of veteran dissident Yoani Sánchez, who declared, 'Cuba is a country surrounded by the sea, and it is also an island surrounded by censorship'²⁶⁷, which seemed ironic in the light of Castro's proclamations that Cuba was alone and surrounded by an ocean of *capitalism*.²⁶⁸



Tania Bruguera, *Tatlin's Whisper #6* (Source: post by 'Latierraenmarte' on YouTube)

Well-founded rumours circulated following the performance that Bruguera spent the night in a police cell under interrogation. There was also surprising

²⁶⁶ *El Susurro de Tatlin (Tatlin's Whisper #6)*

<http://www.youtube.com/watch?v=ilsR6a4vbbk&feature=related> (accessed: 08/03/11).

²⁶⁷ Quoted in Claire Bishop, 'Speech Disorder', *Artforum online*, Summer 2009,

<http://artforum.com/inprint/id=22960> (accessed: 18/08/10).

²⁶⁸ See p. 104.

censure from an unsuspecting corner. The *Bienal*'s organising committee released a statement distancing themselves from the comments of the speakers on Bruguera's podium, asserting that it was 'particularly offensive that our public places and free events are used by those who are paid to manipulate public opinion, lie, censor, mutilate and systematically limit the freedom of speech and thought'.²⁶⁹ The performance was cast by the organisers as 'an act of anti-culturalism, of shameful opportunism, offensive to Cuban artists and to outside artists who come to share their work with us as well as to support our solidarity and also to all of those who have worked so hard through difficult conditions to put together such an amazing event'.²⁷⁰

One might argue that the curators had no choice but to publish the statement, even though they knew that Bruguera was likely to use her performance to make political comment. Post-facto censor was therefore a small price to pay for including her event in the program in the first place.

Bruguera's performance became the highlight of foreign reportage on the *Bienal*, unfortunately at the expense of other excellent Cuban work that was not as politically obvious. These artists were relegated by reviewers such as *Artforum*'s Claire Bishop to 'the bulk of the work in the main exhibition venue [...] that was grindingly mediocre, with very little of the social, interdisciplinary, and research-based art that has come to be a hallmark of Western biennales'.²⁷¹ However, as writer on contemporary Cuban art Rachel Weiss observed, with the aura of censorship that many outsiders perceive as hanging over Cuba, 'irruptions of conflict [such as Bruguera's performance piece and its response by *Bienal* officials] have been a natural hook [for European and North American art magazine reviewers] to headline the incidents of censorship and proscription'.²⁷²

²⁶⁹ Quoted from Cuban blogger Yoani Sanchez' site. See: http://www.huffingtonpost.com/yoani-sanchez/the-winds-of-art-and-of-f_b_188478.html (accessed: 18/08/10).

²⁷⁰ Ibid.

²⁷¹ Bishop, *Artforum online*, op. cit. It can be argued that the *Bienal* work of Cuban artists Douglas Pérez, Reinerio Tamayo, Abel Barroso, and Inti Hernández, although less spectacular and politically overt, did not fit Bishop's limited description.

²⁷² Rachel Weiss, 'Visions, Valves and Vestiges: The Curdled Victories of the *Bienal de La Habana*', *Art Journal*, Vol. 66, No.1, Spring 2007, 12.

Challenges for any biennale remain bound up in questions about how social and political critique can ever be effective in the context of the event's commercial concerns, and thus how the event might avoid having 'the appearance of a cemetery', to borrow again from Daniel Buren. Curator Rosa Martínez believes that on the 'micro-level', as she puts it, critique *is* effective – that, 'even in the context of the art market and our neo-liberal world, there is space for critique [...] and if artists are decorators, then at the same time they can actively affect people's consciousness'.²⁷³

The Italian Minister of Culture, criticising Martínez' 2005 Venice Biennale for being in his view excessively political, chided her for creating a provocative scandal, which most probably referred to Sierra's barricading of the Spanish Pavilion and Gregor Schneider's unrealized proposal for a Ka'abah-like cube to be erected in Piazza San Marco.²⁷⁴ Martínez' responded:

We are not trying to provoke anybody. The scandal and the provocation happen in reality, not in the artworks. Art is a mirror. I am not trying to create a scandal ... the scandal is outside, in the world.²⁷⁵

²⁷³ Zenakos op. cit.

²⁷⁴ The proposal was turned down by the Biennale Committee for reasons that it might provoke political reactions. See: http://www.postmedia.net/08/Gregor_Schneider.htm (accessed: 25/03/11).

²⁷⁵ Ibid.

Conclusion:

The primary context for this thesis is present-day financial capitalism, characterised in particular by the free market economy of the United States, and also evident in the economies of developed nations in Europe and Australasia. My research reflects on the financial market's socio-historical dimension, which can be said to trace the voracity of the corporate world as well as the hopes and fears of members of the public caught up in the machinations of big business speculation.

This thesis proposes that art can provide a platform from which to critique financial capitalism. Its intention has been to contribute to an understanding of the potentially damaging outcomes of irresponsibly under-regulated markets that foster the hyper-mobility of capital and speculative, short-term gains. In my performance/installations, the process of engaging critically with such markets has involved an immersion in the virtual environment of online financial market trading. I have adopted its language and strategies and explored its aesthetic dimension, focussing on the visual means, the graphic indicators, by which the market reveals its evolving patterns of supply and demand.

Contextualising my research in relation to my art practice, I have commenced the thesis with a historical perspective on key art world examples of *systems aesthetics*. My performance/installations that I have included in this thesis have been configured and informed by the types of systems, or methodologies, that are evident in financial market trading and the analysis of market fluctuations and trends. The majority of the projects have developed in response to existing frameworks and situations, and as such their genesis cannot be traced to the conventions of studio practice. Thus, the initial section of the thesis includes a consideration of the notion of *post-studio practice* – in this context meaning a *modus operandi* that regards the site of exhibition, or display, also as the site of production. A consideration of *situational aesthetics* further substantiates the site-specificity of these works. Located in both virtual and material space, the projects have set out to critique the institutional frameworks that have also constituted their discursive and physical structures.

As the projects created conditions that encouraged an engagement with the public, a consideration in the thesis of the rubric of *relational aesthetics* serves to contextualise the artist/viewer relationship. A comprehensive description of a number of my earlier works has also been provided to establish a foundation for the projects referred to in the thesis.

The object of my critique has been the insidious financial speculation that has clearly brought about the destabilisation of global finance. Lack of adequate regulation has brought in its wake widespread problems – among them the collapse of housing markets and the downfall of banks in the U.S., and the return of recessionary threats in Europe. In the main, these difficulties have been borne by average people dependent on a banking system that should provide an ethical foundation from which to realise an economy that is productive for all members of society. To provide a context for the current economic situation, I have included an insight into how the notion of *value* has evolved from the worth readily manifest in elemental gold, to the complex and highly abstract values of financial derivatives represented by ‘blips’ on a computer screen. Included in this perspective are reflections on the figure of the speculator and the mechanisms of speculation in historical and contemporary terms. This overview has provided an insight into the motivations of the free market-ideology, which despite volatile boom and bust cycles is still upheld by the capitalist system as the key to maintaining a dynamic economy.

Through a consideration of its technologies and interfaces, my intention has been to reveal the trading strategies and mechanisms of the market. I have demonstrated this by adopting the choreography of the marketplace, its actions and gestures – or ‘deep play’ – for my performance and relational artworks. The deep play of global financial markets is represented in the millions of transactions between buyers and sellers, and I have provided a detailed consideration of the technical analysis used to trace and interpret this flowing and unfolding process.

I have considered the development of the digital technologies that have facilitated the wide availability of market data and the means for the public to

participate in global capital flows via online trading platforms. In this regard, I have shown how the presence of the domestic day trader in the market has signalled a turning point in which speculation in financial instruments (such as derivatives and currencies) is no longer the exclusive domain of banking institutions. I have suggested that this phenomenon has brought about the democratisation of the market in which any individual with access to the Internet may exercise their right to 'truck and barter' on a global scale. My performances described in the thesis demonstrate this capability, and suggest that instead of being subject to the market's authority, through direct engagement in capital flows as a domestic trader, that authority can be co-opted and reassigned to the public domain.

The progressive democratisation of financial markets has been facilitated by the same technology that has provided the general public with its own means to distribute news and images of geo-political events globally. I have discussed how this capability has, until the expansion of the Internet and development of social media, been the exclusive domain of 24-hour cable, satellite and online news media. My intention has been to consider parallels between the monopolising behaviour of media syndicates and banking institutions. I have shown how the technology that made news and information providers like CNN possible, also facilitated the democratisation of media networks where individuals have been able to bypass discriminatory control. This course of democratisation has been demonstrated in the wide distribution of news and images of a succession of recent Middle East people's revolutions – the 'Arab Spring'. I have contextualised these trajectories in my discussion by referring to what Baudrillard termed the 'deregulation' of photography whereby digital innovations, including the instantaneous global transmission of images via the Internet, have rendered photography a pliable and fluid medium able to adapt to a variety of contexts (and now, in particular, social media). Citing Virilio, I have suggested that the instantaneity of global digital networks has brought about a condition of worldwide tele-surveillance. This condition has both positive and negative effects, and in reflecting on Virilio's analysis, I've acknowledged that the minimal time lag between the actual event and its worldwide transmission problematises the realistic

perception and historiographic evaluation of the event. The thesis has contextualised this in terms of Virilio's distinction between delayed-time and real-time media, and accounted for the evolution of the documentary image as a progression from a cinematographic time-bound medium to an instantaneously distributed phenomenon of the Internet.

In order to draw out resonances between the digital technologies that underpin online financial trading and those applied in popular culture, I have looked at the domain of real-time, multi-user online computer games, referring to their virtual environments in terms of Virilio's notion of 'teletopography' – the capacity to evoke cognitive responses to scenarios similar to those experienced in real life. I have suggested that the mimicking of existent financial markets in online trading finds an echo in the characteristics of real-time 'first-person shooter' games. Both platforms evoke a range of emotions such as fear, anticipation and jubilation.

A complex virtual economy has evolved in the wake of the online trading phenomenon. Once again this finds its source in online role-play games. I have corroborated this by discussing the virtual economy of the 'Linden dollar' and the commodity trade of the online role-play game *Second Life*.

The immersive virtual environments of online computer games and financial market trading have been contextualised in the thesis in terms of what sociologist Karin Knorr-Cetina's refers to as a processual, time or 'flow world'. Like online multi-player computer games, the world of financial trading in effect has no opening and closing hours. The 24-hour trading and electronic trading marketplace has evolved into a 'marketscape', with distance and duration reduced to negligible measures at the click of a mouse. This global expansion, yet paradoxical shrinking, of the market's parameters has transcended time zones allowing traders and analysts alike to share a global co-presence in which all participants are able to observe one another's online actions.

The illusion thus created gives the market the appearance of a gigantic, singular organism surging and retreating in response to constantly evolving

algorithms. The thesis has thus regarded the market as having the characteristics of a complex organism that at times can appear to display forms of spontaneous self-organisation. One of the primary methods for traders to investigate the possibility of self-organising principles in the market is 'technical analysis', a means by which charts representing market movements are appraised. The thesis has thus considered aspects of this practice and in particular one of its key methodologies, the *Candlestick Method*, which is readily able to represent fluctuations and trends in the market.

I have focused on the *Candlestick Method* as providing the clearest illustration of the process of technical analysis. The vivid aesthetic qualities and poetic descriptions of the Candlestick patterns have been comprehensively illustrated in the thesis, their gestalts inviting comparisons with formal aspects of visual art. Identifying with these qualities, I've featured the *Candlestick Method* in a number of my performance/installations.

Financial markets respond readily and significantly to geopolitical events and I have described how the U.S. government has targeted these bellwether responses in order to build military intelligence. I have thus referenced the U.S. Defense Advanced Research Projects Agency (DARPA) and its attempts to establish an 'early-warning' system aimed at evaluating national security by means of its *Policy Analysis Market*. The thesis details this ill-fated attempt by the CIA to seek out possible geo-political threats made manifest in movements of financial markets. In the same context I have looked at the CIA's experiments using of parapsychology for strategic military purposes. The CIA-developed *Remote Predictive Viewing* technique, which emphasises visual primacy, was applied to my performance project of the same name (*Remote Predictive Viewing*, 2008).

As the formal processes and gestures of financial capitalism have formed the theoretical foundation of this thesis, I have provided a counterpoint by reflecting on the informal, or 'black', market of Cuba. As mentioned in the thesis, Cuba can 'arguably be described as, according to the rhetoric of Fidel Castro, the most consistent and vociferous critic to date of the West's

capitalist economic model'. The inclusion of a Cuban perspective in the thesis was prompted by my invitation to participate in the Havana Biennale in 2009. My project for the Biennale provided me with an opportunity to experience at first hand the successes and failures of the Cuban socialist model, and to reflect on the chimera of capitalism that I sought to trace out during my time in Havana. Through my collaborative work with two Havana artists (*La Fuerza del Deseo/La Fuerza de la Necesidad*, 2009), I participated in the informal market with the outcome reflecting both the resonances and differences with a western free market economy. In the process, the project highlighted Castro's attempted isolation of Cuba from the Capitalist model that, despite protestations to the contrary, is beginning to insinuate itself into the local economy.

As stated previously, my research has not intended to provide a comprehensive exposition on economic theory. In order to draw the thesis back towards its practice-based foundation and motivation – art practice – the discussion on aspects of the Cuban economy has provided an appropriate link to an important event in the country's cultural calendar. Tourism has become the primary source of foreign income in Cuba and in this regard the Havana Biennale has come to represent a significant financial drawcard. In tracing global parallels, the thesis concludes with a reflection on the international biennale phenomenon, identifying it as a troubled melting pot where art, tourism, economics and global politics now have to share centre stage.

While the etymology of the word 'economy' can be traced to the Ancient Greek *oikonomia*, referring to the management of a household, usually a manorial estate²⁷⁶, the current use of the term has become infinitely more complex. The management of households has extended to the city-state, the nation-state and, through the vicissitudes of modern history, to the international economic arena. In contemporary discourse the term 'the

²⁷⁶ Chris Hann and Keith Hart, *Economic Anthropology*, open source: <http://api.ning.com/files/ypyo9ZI0AjEY1-tMoUs9Mi80MPuqs5OKkvlFrnqYcDySuyx4sYRuTO37qFiMm3JDixVVLzjAD2RlvHCkd5mt4oohSZDBTrZ/EAtocfinal.doc> (accessed: 10/08/10).

economy' is predominantly skewed towards the American and European contexts as their financial markets have engendered the most consistent and significant global economic impacts to date. Acknowledging that there may be a number of domains to which the notion of an 'economy' might be attributed, such as political and religious economies, this thesis has focused on a particular aspect of the global economy – financial capitalism and its manifestation as a financial market.

In essence, financial capitalism's purpose is to use wealth to create more wealth, the 'purely individual pursuit of maximum individual profit as a model of rationality'²⁷⁷, as Bourdieu describes it. Wealth, according to anthropologists Hann and Hart, comprises 'all resources having economic value'²⁷⁸, and the consolidation and augmenting of these resources is achieved through the activity of enterprise. The primary form of enterprise focused on in this thesis has been *speculation*. Speculation can be identified as a key cause of historical cycles of booms and busts in financial markets, and is not without its implications for ordinary society in the trickle down effect from Wall Street to Main Street. In a more positive light, speculation has also been regarded as the embodiment of the Keynesian 'animal spirits' that bring a steady flow of liquidity and dynamism to financial markets.²⁷⁹

In 1776, in the magnum opus that forged the foundations of economic theory, Adam Smith asserted that within human nature there was the 'general disposition to truck and barter', in other words to speculate and trade. As a result of this tendency markets would remain buoyant and thus have an increased potential for 'increasing the wealth of nations'²⁸⁰. Smith was under no illusions however, that in realising this disposition speculators were not necessarily going to go about their business in the spirit of altruism, intent on serving the best interests of the public:

²⁷⁷ Bourdieu op. cit., 100.

²⁷⁸ Hann and Hart op. cit., 159.

²⁷⁹ See: John Maynard Keynes, *The General Theory of Employment, Interest and Money* (London: Macmillan, 1936).

²⁸⁰ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (first published 1776), (Charleston, South Carolina: Forgotten Books, 2008) 21.

Every individual necessarily labours to render the annual revenue of the society as great as he can. He generally neither intends to promote the public interest, nor knows how much he is promoting it ... He intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for society that it was no part of his intention. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good.²⁸¹

As Hann and Hart point out, Smith ‘stopped short of claiming that society’s interests as a whole were best served by markets left to their own devices’.²⁸² They suggest that Smith’s reservations about the impacts of such markets have by and large been ignored by contemporary economists, in favour of his support of the notion of a free-market.

The free-market capitalist system, in its unregulated form, has arguably had negative impacts on the public good. Writing in 1998, Bourdieu identified an ‘extraordinary growth in disparities of income’ in the new millennium’s ‘neo-liberal utopia’ of free-trade faith.²⁸³ He also noted an increasing proportion of society in the most advanced economies as experiencing poverty, and referred to an unregulated market as an ‘infernal machine’, foreseeing dire implications for cultural production in the face of intrusive commercial interests. He also expressed his dismay at what he refers to as the destruction of collective cultural institutions capable of resisting the infernal machine.²⁸⁴

Bourdieu wrote *Acts of Resistance Against the Tyranny of the Market* at the height of the e-commerce, dot-com boom. Had he lived beyond 2002 however, he would have witnessed the exponential growth of online information, as well as audio and image sharing. He may well have participated in the coming-of-age of democratised media and online information resources achieved through the open source software and user-led production sites, such as blogs and wikis. These innovations have

²⁸¹ Ibid., 339.

²⁸² Hann and Hart op. cit., 34.

²⁸³ Bourdieu op. cit., 102.

²⁸⁴ Ibid.

proposed and promoted a co-operative model for society, one based on the notion of the *commons*, the communally held resources that Hardt and Negri, in the concluding passages of *Empire*, offer as the key to the ‘incarnation, the production, and the liberation of the multitude’. They propose that the recent transformations in modes of production – consequences of the age of digital ‘informatization’ – have established a more ‘radical and profound commonality than has ever been experienced in the history of capitalism’.²⁸⁵

This notion of commonality is reflected in Axel Bruns’ study of user-led spaces such as *Wikipedia* and *Second Life*, in which he reframes the *producer > distributor > consumer* equation, and proposes a transformation of the production cycle into what he terms *produsage*.²⁸⁶

Bruns’ interest lies in how the traditional production cycle – characterised by the Fordist²⁸⁷ industrial model that aligns in linear fashion the *producer > distributor > consumer* relationship – might be interrupted to facilitate a more active and productive engagement by the consumer. He cites Internet technologies commentator Clay Shirky’s apt description of the conventional relationship between producer and consumer: ‘The historic role of the consumer has been nothing more than a giant maw at the end of mass media’s long conveyor belt’.²⁸⁸ This linear model is also characteristic of modern mass media, previously discussed in this thesis in terms of how the means of production and distribution, as well as reception, have become widely available to global information communities; what French media analyst Pierre Lévy refers to as the decentralised *collective intelligence*.²⁸⁹

In terms of financial markets, through direct engagement not as passive investors (or *consumers*) relying on third party brokerage firms, individuals

²⁸⁵ Hardt and Negri, op. cit., 300ff.

²⁸⁶ Axel Bruns, *From Production to Produsage: Blogs, Wikipedia, Second Life, and Beyond* (New York: Peter Lang, 2008), 9-33.

²⁸⁷ The Fordist model was derived from the revolutionary post-industrial mechanised production lines of the Ford Motor Company with its emphasis on worker efficiency. The model is also related to early 20th century Taylorism (named after the U.S. industrial engineer, Frederick Winslow Taylor) whereby, in seeking production efficiency, tasks are fragmented into elementary units in order to enable assemblage by lesser-skilled (hence lower paid) workers.

²⁸⁸ See: Clay Shirky, *RIP the Consumer 1900-1999*, in *Writings down the Internet: Economics and Culture, Mass Media and Community*, Open Source: <http://www.shirky.com/writings/consumer.html> (accessed: 24/02/10).

²⁸⁹ Bruns op.cit., 16.

have the opportunity and technical facility to insert themselves into flows of global capital as participating *users*. The terms of Bruns' study can be adapted to online trading platforms, market forums and financial chat rooms such as *hotcopper.com.au* and *aussiestockforums.com.au*²⁹⁰, where users:

... are able to involve themselves flexibly and fluidly in the tasks confronting the collaborative 'hive' community; they collaborate not by performing only the monotonous, repetitive, predetermined tasks of the production line, or by contributing fully formed new ideas to the information commons, but instead engage in an ongoing, perpetually unfinished, iterative and evolutionary process of gradual development of the information sources shared by the community.²⁹¹

The disruption of the production cycle as described by Bruns has enabled the *consumer* to become both a *user*, and a *producer* of information. The financial market is continually evolving, with prices changing constantly. Accordingly information, rumour and speculation integral to the functioning of the marketplace require constant updating by the information commons and its constituent *producers*.²⁹²

A domestic trader participating in the ebb and flow of bids and offers is theoretically able to move the cogs, even if they are small ones, of Bourdieu's 'infernal machine'. This process also provides the opportunity for groups of individuals to engage with and evaluate the very structure and management of public companies. Shareholders can attend and vote at annual general meetings. Collectively, individuals who are represented by large shareholder groups, such as superannuation funds, can also exert an influence on companies and thus the market sectors the funds invest in. This process might involve maintaining an overview of the checks and balances regarding corporate governance, and the social and environmental impacts of a company's research and development activities. Active engagement on this level has become known as *shareholder activism*. In Australia, there have been a number of class actions brought by shareholders that have successfully challenged companies for misleading shareholders, among them

²⁹⁰ <http://www.hotcopper.com.au>, and <http://www.aussiestockforums.com.au> (accessed: 24/10/2010).

²⁹¹ Bruns op. cit., 20.

²⁹² Ibid., 21.

the lawsuit against the insurance giant GIO.²⁹³

Hann and Hart suggest that with the maturing of online connectivity, a more pluralist version of society composed of mobile networks has emerged, outmoding the conventional capitalist model that situates the idea of 'society' and its consumers within a single locus. According to Bruns, a flexible societal model facilitated by the provision of 'tools for widespread, equitable collaboration across large communities of users [would] remove the real-world limitations placed on social and/or collaborative behaviour by factors such as language, geography, background, financial status'.²⁹⁴ This thesis has sought to demonstrate how the tools of the digital revolution offer far greater opportunity than ever before for those constraints to be transcended, whether it is in terms of the sharing of common interests, the creation of common intellectual property, or in broader access to financial markets.

Resisting neo-liberal governments' tendencies to confuse social democracy with free-market liberalism, in the projects contextualised in this thesis I proposed to explore the financial market's ideological apparatus by taking on its actions and gestures. The 'disposition to truck and barter', as a cultural act, has been engaged to *re-frame* the market through what Bourriaud refers to as the 'filter of a critique of the institution'.²⁹⁵ I take heed of Bourriaud's concerns regarding the shift from a goods-based economy to a service-based economy, where 'anything that cannot be marketed will inevitably vanish'.²⁹⁶ However, this reservation may be counteracted by the rise of *produser* and commons-based, peer-to-peer communities, which challenge the passive character of the modern consumer. Instead, a social figure is evolving engaged, as Bruns proposes, in 'a fundamental reconfiguration of our cultural and intellectual life,

²⁹³ See: <http://www.abc.net.au/rn/backgroundbriefing/stories/2008/2283769.htm> (accessed: 23/10/2010).

For shareholder activism strategies, see also: http://www.australianshareholders.com.au/asa_site/images/pdf_archive/EquityMagazine/eq-2010-03.pdf (accessed: 23/10/10).

²⁹⁴ Bruns op.cit., 3.

²⁹⁵ Bourriaud, *Postproduction*, op. cit., 70.

²⁹⁶ Bourriaud, *Relational Aesthetics*, op. cit., 9: 'For anything that cannot be marketed will eventually vanish. Before long, it will not be possible to maintain relationships between people outside these trading areas.'

and thus of society and democracy itself'.²⁹⁷

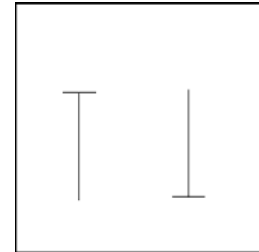
Thus the methodological enquiry that underscores this thesis has not rejected the free-market economy or financial speculation. Instead, I have suggested that the market might be co-opted and re-framed through the deep-play of cultural intervention. 'Thickening the plot' by direct participation in its capital flows, and by addressing the fears and anxieties bred in the financial market's domain, I have proposed an approach towards gaining a better understanding of capitalism's complexities and a means to evaluate, and in some cases offset, its significant political and societal impacts.

²⁹⁷ Bruns op. cit., 34.

Appendix i

Further Examples of Candlestick Patterns

One of the most important candlestick configurations is that of the *doji*. At the bottom or the top of a strongly trending market, the presence of the *doji* can indicate an imminent reversal. This is a candlestick with a horizontal line instead of a *real body* that transects the shadow line. Technically, this means that the opening price is the same, or near to the closing price. If the horizontal line is close to the top of the candlestick, it is described as the *dragon fly doji (tonbo)*. The reverse of this shape with the horizontal line at the bottom is known as the *gravestone doji (tohba)*. This latter candle is very bearish, and usually indicates an imminent reversal when appearing at the top of a rally.



(Source: IG Markets)

The particular character of a significant candlestick depends on where in the trend it appears. The hammer-shaped pictogram gives an opposite indication if it appears at the top of a trend²⁹⁸. In this scenario it is known as *the hanging man (kubitsuri)*. Nison advises, 'the hanging man line is a top reversal signal that must arrive during a rally, while the hammer is a bottom reversal line that must appear during a decline; the same line can be bullish or bearish,

²⁹⁸ With regard to the same shaped candlestick having a different implication depending on where it appears in a trend, Nison points out the accommodation of binaries using the same root word in the Japanese language. For example, he points out the words for 'rice': *raisu* is the term for rice prepared in the Western style, boiled with no intervention, and *gohan* is the term for rice prepared in the Japanese tradition using Japonica rice, and kneaded to increase glutinous texture (Nison op. cit., 60).

depending on the line preceding it'.²⁹⁹ The market psychology revealed by the *hanging man* is that it indicates active buying at the top of the range to support a high closing price – the buying however, is not by the 'smart money' but by the hopeful traders who feel that the upward trend will continue. They are eagerly buying what the 'smart money' is selling as it takes profits after the incline.



(Source: IG Markets)

Another variation on the *hammer* and *hanging man* is a candlestick that is inverted at the top of a rally, or incline. This candlestick has a long upper shadow with the open and close near the bottom. Because of its shape, it is known as the *shooting star (nagare boshi)*. The market psychology behind this session indicates that although prices made a new high, buying power was unsustainable and price fell back at the close: 'the market rejects the higher prices'.³⁰⁰ This *shooting star* warns that a trend reversal is imminent.

²⁹⁹ Ibid.

³⁰⁰ Ibid., 66.



(Source: IG Markets)

In many cases the candlestick has a short real body seemingly suspended between long upper and lower shadows. These pictograms are called *spinning tops (koma)*, and are a warning sign that the market is losing momentum. Nison comments that this can happen when the market is nearing a new high where, 'especially after a steep advance – the emergence of a *spinning top* could be the signal that the bulls are having trouble in continuing their ascent'.³⁰¹ The appearance of *spinning tops* often precedes a sideways, trendless market with little change in prices.



(Source: IG Markets)

³⁰¹ Nison op. cit., 41.

Appendix ii

Web Archive for *catchingafallingknife.com*

- a. Press release
- b. Daily Reports
- c. History of Trades
- d. Final profit and loss statement
- e. Consortium transcripts
- f. Geert Lovink transcripts
- g. Geert Lovink: interview with Michael Goldberg
- h. Geert Lovink: interview with Neil Chenoweth

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