Mirror as Metasign: Contemporary Culture as Mirror World

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Abstract

The mirror, central to traditional Western epistemology and representation, has shattered. Yet its metaphors, mechanisms, operations and poetics continue to powerfully shape and evocatively describe, contemporary Western culture. The exhibition, After Reflection, investigates realist representation in a post-mirror paradigm, through paintings, prints and projections that incorporate perceptual plays, virtual imaging and digital modeling. The dissertation charts the history of the mirror metaphor and its reconfiguration through post-modernity. It suggests that while the metaphor may be superceded it remains useful and evocative but only if considered in the form of a mirror-ball rather than as a planar mirror. The dissertation examines the mirror metaphor and its relationship to a wide selection of aspects crucial to the arrangement of contemporary Western culture, art and space.

The thesis is structured as a mirror-ball, in small fragments that both reflect on and illuminate aspects of the topic. The dissertation is thus divided into various ‘Shards’ – broad subject headings derived from the primary mechanisms and poetics of the mirror. Within each shard are a varied number of ‘Rays’ – lines of illumination arising from each shard that impact on particular aspects of Western culture.

The exhibition After Reflection includes further speculations around the theme of the mirror and with the arrangement of contemporary space – both pictorial and actual. It is not intended to illustrate the dissertation but to be an additional supplement that visually elaborates on issues enmeshed and parallel to those addressed in the dissertation. The works have all been completed during the period of the candidature (from March 2000). They include six oil paintings, a set of Lightjet photographs (from the “Echobhouse’ series) generated from 3d modelling programs and then face-mounted to Perspex. There is an additional three larger scale Lightjet photographs from another series. Finally there are projected works. One is a self contained DVD projection and the other is Mirror Land - a large scale 3d animation covering two wall and projected in a chiasmatic arrangement. Both works feature an endless looping repetition.

All the works play with metaphoric aspects of the mirror and examine the construction of space in contemporary Western culture. This space has become increasingly rationalized since the Renaissance and mirror a more general abstraction whereby the real is evermore preceded by simulations. The work looks at the mirror land and suggests a mode of realism capable of addressing the situation where the real has increasingly been reconfigured into representation.
Declaration

This is to certify that

(i) the thesis comprises only my original work towards the PhD except where indicated in the Preface,
(ii) due acknowledgement has been made in the text to all other material used,
(iii) the thesis is less than 60,000 words in length, exclusive of tables, maps, bibliographies and appendices.

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Introduction

This dissertation investigates the mirror as a powerful cipher underwriting many aspects of Western culture, art and space. The argument demonstrates that such is the power of the mirror - so pivotal is it as a mechanism and metaphor in Western culture - it can be considered as a metasign for our age. The role of the mirror is not merely simple and direct, but is more potently revealed in the metaphors and analogies that surround it. The purpose of this work is to draw out these latent and explicit poetics to reveal their influence, rather than simply listing instances where the mirror appears in art and literature. ¹ Even at this restricted level, the sway of the mirror has been immense and saturates Western culture to such a degree that this treatment cannot hope to be comprehensive. Like many fundamental aspects of culture that have become so pervasive they are often considered to be commonsense, or as Roland Barthes put it “.. Nature and History [become] confused at every turn …in the decorative display of what-goes-without-saying…” The mirror as a subject has been, until recently, largely overlooked. Only three attempts to write a history of the mirror have been attempted and two of those have been published in the time since this thesis was begun. ³ Yet as this dissertation will argue, the mirror is a rich, evocative and defining force in the contemporary period.

Not only is the mirror central to Western theories of representation and epistemology, particularly in the visual arts, it suggests and reinforces a consideration of the world as constructed in binary terms. It was also pivotal in the development of the

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¹ Such are the number and scope of such examples that they could not be contained within a work of this size besides which limited attempts have been made elsewhere. For a recent survey exhibition charting such examples see: Miller, J., Mendes, V. D. & National Gallery (Great Britain), *On reflection*, (National Gallery Publications ; Distributed by Yale University Press, London, [New Haven, Conn.]), (1998).


Western concept of the individual and of the Self. In the Renaissance period it grounded the development of linear perspectival representation (and its subsequent mechanization as photography). The Renaissance mirror also contributed to the formation of humanist ideology and an ensuing era that might be broadly characterized as narcissistic. Beyond its reflective capacity, the mirror suggests itself as a gateway to other, parallel spaces that lie beneath its tain. In its transformation and extension of space, it is a useful device for understanding the general mechanisms of colonization as well as the construction of recent ‘virtual spaces’ and in revealing what, this paper will argue, is a structural link between the two. In producing reflections or copies, the mirror stands as a central metaphor (and actual device) for the operation of communication systems. In presenting repetitions of an object the mirror may be cast as a metaphor for industrial production and urban spatial organization. In its faithful reproduction of an image, and in its capacity to re-reflect and thus multiply images, the mirror is also a paragon for the mechanical reproduction and serial multiplicity of images in the modern era. It has also been central to the evolution of the modern ‘ocular regime’ that has recently attracted a variety of detractors. 4 Above all else, the mirror is not only a metaphor – it is to a great extent, and with appropriate self-reflexivity - the metaphor for metaphor itself. By reproducing a figure of likeness expressed a different form, its operations are definitively metaphoric. In short, by examining the evocative metaphor of the mirror, many central features of Western culture may be illuminated.

The planar glass mirror is a relatively new device. Although there were mirrors in ancient cultures, their resemblance to modern mirrors – objects of great clarity and size, that feature pure, planar surfaces - is only slight. Until a technique was developed for producing large-scale glass mirrors in the late 16th and early 17th centuries, mirrors were typically constructed from polished metals or, if glass, were small and convex. The metal mirror was a dim, small affair, and its reflections were only approximately planar and subject to the colour casts of its construction material. Indeed, reflections generally – those natural wonders that the technology of the mirror harnesses and amplifies – were a rarity, at least those capable of producing an image. It is often forgotten in the dazzling ubiquity of today’s reflective surfaces that, for many centuries, the self was

4 A general treatment of this can be found in Jay, M., Downcast eyes : the denigration of vision in twentieth-century French thought, (University of California Press, Berkeley), (1993).
viewed dimly, incompletely and uncertainly. Similarly the mechanisms of reflection were
darkly understood and the mirror was an object of wonder, mystery and even of
ominous magic. What lurked within the mirror was a land of speculation and
imagination - an anterior world parallel to the directly perceivable.

In the modern era the mirror has been stripped of its mystery. The mechanisms
of reflection are well understood and a clear vision of the self is seen in its entirety. The
mirror has become a commonplace, indeed ubiquitous, companion to everyday life.
Much of its imaginary wonder has been stripped from its existence so that mirror
images have become an empty space of pure symmetry – unthreatening, direct and
explainable.

The technical advances in glassmaking in the fifteenth and sixteenth centuries
and the greater understanding of the mechanics of vision in the seventeenth
century are what led to the ‘metaphysical decline’ of the mirror. By shedding its
mystery the mirror (by then perfectly flawless but ordinary) became an
instrument of social conformity and offered man the freedom of a solitary face-
to-face encounter. 5

Despite this, many aspects of the mirror remain ambiguous and uncertain. What causes
the mirror to reverse left for right, for example, is an ongoing debate that has lasted for
millennia. Under the right circumstances, even simple reflections can disturb our
observations, and confuse our reason. Recent research into human perception is
revealing that traditional Western assumptions that regard vision as analogous with the
operations of the mirror are erroneous. Although contemporary Western culture may
regard the mirror as a cipher for objectivity, direct knowledge and neutral
representation, this is not in fact the case. The mirror is fundamentally constructed in
subjectivity rather than objectivity as explained in Shard 1, Ray 9.

The mirror has engendered many image making devices currently so ubiquitous
in the modern era. Most of these incorporate actual mirrors, or the logic of the mirror,
in their mechanisms and methods of production. These include photography, cinema,

5 Melchior-Bonnet, The mirror : a history, p270
offset printing and most recently, the virtual space of three dimensional computer modelling. In some ways, these commonplace but no less miraculous devices, have become something of a substitute for the mysterious, wonder-inspiring mirrors of the past by conjuring up uncertain sights and parallel spaces within the fabric of the quotidian.

The mirror as a metaphor for perception and understanding has occupied an important position in Western epistemology since Plato. This role was revived during the Renaissance period and has assumed a central importance since the age of Enlightenment and the emergence of modern science. Notions of representation in the West are overlaid with metaphors of reflection: the relationship between origin and copy, subject and object, as well as the problematic correspondences and symmetries that govern them, are all caught within its grasp. This is evident in the gloom of Plato’s cave, the musing of Descartes, and the physics of Newton. This conception of epistemology-as-mirror has been criticised by a number of recent philosophic traditions emerging with Friedrich Nietzsche and having their most vocal contemporary voice in the work of Jacques Derrida, Richard Rorty and others. These thinkers are critical of the supposition of strict coherence between the external world and our internal ‘representations’ of it. The systems they critique typically contend that our internal representations are in some way directly correspondent with the external world. As Richard Rorty puts it:

The picture which holds traditional philosophy captive is that of the mind as a great mirror, containing various representations – some accurate, some not – and capable of being studied by pure, nonempirical methods. Without the notion of the mind as mirror, the notion of knowledge as accuracy of representation would not have suggested itself. Without this latter notion, the strategy common to Descartes and Kant – getting more accurate representations by inspecting, repairing, and polishing the mirror, so to speak – would not have made sense.  

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Although in a process of transition, this paradigm is inherent in the assumptions of academic disciplines and of thesis writing. The model for many of the humanities disciplines was drawn from the domains of 19th century scienticism and still persists. There is an expectation that, at least in structure, a thesis will be like a single, planar mirror accurately reflecting and reflecting on (that is, both accurately representing and thoughtfully considering) a given area of research. This distanced ocular model of remote observation is shifting but remains a fundamental trope that distinguishes academic studies from others. The need for demonstrated correspondence between the claims of the author and actual conditions are reflected in the discipline of providing concrete support for arguments, the necessity for footnotes and all the other requirements of academic research.

This is an understandable and useful requirement if one wishes to make a distinction between fact and fiction, between conjecture and certainty. In our uncertain era it is precisely these distinction that are questioned by post structuralist theory and other commentators – are they real distinctions or is it simply a question of style? A symmetrical correspondence between the observed and that reported, was once considered a foundation ensuring something like “truth”. In the current era however, these are more likely to be seen as ‘supporting evidence’ and the worth of an argument is not determined by its claims to a higher ‘truth’ but to the extent that the arguments are compelling, interesting or persuasive. By what external measure these conditions should be compared in order to establish their value as ‘compelling, interesting or persuasive’ is, however, often left unstated. This merely defers the assumption of a mirror correspondence with a (now unstated) paradigm of worth. Many disciplines that have rejected the certain dogmas of their subject areas now find themselves floundering for a solid foundation for their authority, ironically whilst still remaining authoritative.

Attendant to this problem is the altered nature of supporting evidence itself. In the 19th century, one could read most of the literature on any given subject. Knowledge was a restricted field and one could build one's arguments on the authority of relatively few precedents. Today, with mass publishing and the Internet, it is impossible to read all the literature available on any given subject. Instead, one finds it is possible to extract from amongst this ever-expanding world of reflections, evidence calculated to suit (or conversely refute) any predetermined argument. In these circumstances, references to the literature carries far less authority than it did in the past.

In part, this is a situation that haunts this thesis, but for the moment, let us accept that there is some claim for accuracy and correspondence possible between the world and our descriptions of it. There are, after all, spectacular successes in the realm of science that result in practical applications and this suggests their theoretical constructs must be somewhere in the ‘ball park’ in describing ‘real’ conditions. Even if we accept this situation however, it is clear that the mirror metaphor has been substantially transformed from its earlier authoritative stance. Currently, knowledge of the world is not of the same nature as was supposed by Enlightenment thinkers – a singular complete, planar mirror capable of accurately picturing the world within a single frame.

The Enlightenment project, for example, took it as axiomatic that there was only one possible answer to any question. From this it followed that the world could be controlled and rationally ordered if we could only picture and represent it rightly. But this presumed that there existed a single correct mode of representation which, if we could uncover it (and this was what scientific and mathematical endeavours were all about), would provide the means to Enlightenment ends. 8

There currently exists a far more contingent form of correspondence. Not only have post-structural critiques made this point but the physics of Einstein, Cubist paintings, the discordant collages of punk music and many others, each echoing a similar refrain. Indeed, much of modern art set to the mirror of knowledge with a hammer and was at

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pains to place the realms of the imagination ahead of those of a dubiously grounded and totalizing conception of knowledge. Additionally, there is an emergent recognition of the validity of other cultural beliefs, of ‘Other’ explanations of the world, and of the heterogeneity of cultural values within our own culture. Many of these are in direct opposition to dominant Western modes of thought – are they to be dismissed as simply wrong? By the early 21st century it is time to acknowledge the notion of epistemology as a simple, planar mirror has been shattered.

Notes on Structure

This dissertation will argue that the mirror metaphor remains useful but is highly contingent. As such it would be pointless to structure this work as a traditional thesis that ignored the very problem it addresses. I assume then that the epistemological metaphor of the mirror has shattered but that shards remain, or rather, there are now many forms of the mirror that are incomplete, multiple and reflect only small, segmented portions of the world. The thesis intends an overview - not to return to the planar mirror of the past - but to reconfigure the mirror into a new entity more akin to the contemporary situation. I propose then that this structure will be like a mirror-ball. That is, made up of various small segments, uncertainly suspended, rotating on a shaky spindle and producing a fragmented view on the world. Crucially, a mirror-ball is not just a device that reflects, but also projects. It is capable not merely of reflecting its surrounds, but it may also bounce light into the surrounding world. Unlike the planar mirror, the mirror-ball is not uniform, nor are its projections whole and regular. Rather, they are constituted in fragments, disjunctions, discontinuities and sporadic ‘jump cuts’. It creates only fleeting illuminations in narrowly defined shafts of light and produces not a uniform luminance, but dappled points of shifting clarity seen as if through smoke. This dissertation, like a mirror-ball, seeks not to produce a coherent, unified illumination of the world but an effect – a partial, and hopefully intriguing, series of spotlights. Like a scene in some nightclub, my method will result in a collage of juxtaposed images rather than the seamless overview typical of Nineteenth century Salon paintings, that painstakingly brushed out the sutures of their construction. It is hoped the overall effect will be like sitting uncertainly at a bar late at night, looking out and considering the nightclub scene before you, shakily lit by a mirror-ball. The scene
presents a less than coherent vision, but nonetheless is punctuated by moments of startling clarity that restlessly flicker and elude stasis. This thesis will pick out stimulating moments of interest from the wavering scene before us rather than attempt to fully illuminate the field of view.

The dissertation has therefore been broken into six main ‘shards’. These are the mechanisms and effects by which the mirror operates - Reflection, Representation, Repetition, Symmetry, Displacement and Transformation of Space and the suggestion of the Diabolic. In the final section, ‘After Reflection’ the upshot of all these effects will be considered.

As mechanisms of the mirror, each of these shards produces the next. The primary function of the mirror is that it reflects. The instant it does so, a number of other mechanisms and effects follow and each in turn, evoke poetic and metaphoric readings. As mirrors reflect, they also represent. By representing the object before them in another form, they create a dyadic symmetry. In creating a symmetrical image of the object, the mirror not only displaces the mirrored object into a new space, it transforms it into a new materiality – a transformation and displacement of space. As each of these processes come into play a new, uncanny space resembling that of the original, but transformed into a mysterious, reversed double is produced. This is a simulacrum of the real with potentially diabolic portents. These mechanisms and effects are the primary ‘shards’ that head the chapters of the thesis. From each of these shards emerges a varied number of ‘rays’. These short sections trace aspects arising from each shard as ‘lines of reflection’ to elaborate on and illuminate the resulting consequences.

In fact, rather than each shard following one another in such a neat, sequential schema, these mechanisms and effects are entwined and occur simultaneously. The division here, like the mirror-ball, like language itself, is an artificial device that creates a particular effect – that of (partial) clarity. From these shards emerge various way of viewing selected fragments of contemporary Western culture.
Although the mirror may be considered in many ways, also central to this work is the evocative idea as art as a type of mirror. This seems an old fashioned notion in some respects, but the idea that the work of art could stand in relation to the world surrounding it and thus capture its particularities, whilst simultaneously reflecting back a distilled commentary on that before it, has personal appeal. Such an art, that reacts to its day, while being a record and commentary on it, is generally called realism. Yet the simple mimesis that once accompanied this approach is no longer relevant. As the mirror-ball analogy suggests, and especially following post modernism, the very link between the world and our representations of it are cast into question. A central concern of this work is to ask the question: How might realistic art look in this era where simple mimesis seems neither possible or desirable? If rather than hermetically referring to the structures of its own production, or the discourse of art itself, it looked to a world outside itself? In short, how might realism look now?

The written dissertation is intended to operate as a supplement to the visual work displayed in the exhibition. The written material will deal with those aspects that lend themselves to textual explanation, while the visual work will be a speculation on selected possibilities and manifestations of the mirror in contemporary Western culture and space. Ultimately, this thesis intends to consider key aspects of the mirror - its poetics and its use as a metaphor - as a meta-sign for contemporary Western culture and space. It will argue that contemporary Western culture is not just caught in the mirror, but that we also inhabit a ‘mirror-land’.
The history of the mirror is a history of technology. Although Johannes Kepler once remarked that the entire world was a ‘gentle mirror’ because all things within it are visible because they reflect light,⁹ mirrors capable of actually forming an image are extremely rare in the world of nature (a cause for our continuing fetishization of them). Apart from freakish incidents of natural reflection - particular shells, ores and stones - the most common form of natural ‘mirror’ occurred in bodies of still water. Such examples remain reflections, however, not mirrors. Mirrors are a technology used to harness these natural occurrences. The history of the mirror is thus tied to the history of other image bearing technologies.

The contemporary period is a historical rarity, one in which clear, planar reflections, indeed, reflections of all sorts, are commonplace. From the simple glass mirror, to car duco, to the endless modern surfaces that shine and reflect, to that mirror with a memory - the photograph and its dizzying number of stored reflections - the mirror is now an ubiquitous device. Indeed, the ability to see the whole of oneself in the mirror without convex distortion, is an invention of the modern age. Although this is a historically unique situation, the ubiquity of mirror technologies shrouds the fact that the development of the modern planar mirror was a slow and arduous process that evolved over several centuries. The production of the modern mirror not only reflects pivotal shifts in Western culture, it was also a contributing cause of these shifts. A brief historical account of mirror technology puts all this into perspective.

There is no available evidence to suggest that tribal societies developed mirror technology, although they were familiar with naturally occurring reflections. This does not entirely rule out the possibility that they did in fact construct mirrors. It may be that examples are lacking because tribal societies have a less visible archaeological record and

⁹ Pendergrast, Mirror mirror : a history of the human love affair with reflection, p 85
fewer traces of their culture remain than city builders. Given that advanced technical facilities and labour divisions are required to produce a mirror, however, it is unlikely prehistorical societies knew of anything but natural reflections or rudimentary ‘natural’ mirrors. These would have been comparatively rare and yielded a poor quality reflection. The development of mirror technology then is directly tied to the development of ‘civilization’ itself.

Early mirror technologies are as various as the cultures that produced them. There are examples of the black, transparent rock, obsidian being fashioned into mirrors in Anatolia six thousand years ago.\textsuperscript{10} This material was also used in Mesoamerica by the Mayans and the Incas and, in the guise of Texcatlipoca (‘the smoking mirror’), was revered as a god.\textsuperscript{11} Black carbuncle, phengite (a form of mica), and even emerald were used by the Romans as mirrors\textsuperscript{12}. The most common mirror technology of antiquity however were polished metals. Various forms of these – alloys of copper and tin, later of bronze, occasionally of silver and more rarely of gold – were used. Metal mirrors, in their various manifestations were known to the ancient Mediterranean civilizations of Egypt, Mycenae, Greece, Etruria and Rome. Metal mirrors were also used by the Chinese who first developed a conception of mirror optics by the 4\textsuperscript{th} century BCE.\textsuperscript{13} Metal mirrors had many failings and were restricted in size due to the costs and difficulties in working the relatively rare materials. The images cast from metal mirrors were imbued with colour casts emanating from the alloys from which they were made. Their reflective surface were, in varying degrees, convex as a result of the polishing process that made them reflective. Most importantly, metal mirrors were only dully reflective by today’s standards and tarnished over time. Nonetheless, metal was used to produce vanity mirrors well into the 19\textsuperscript{th} century in non-industrialized countries (such as Japan) and was still used in a few reflective telescopes of the time - most notably the ‘Hubble’ of its day – the doomed Great Melbourne Telescope of 1869.\textsuperscript{14}

\textsuperscript{10} Melchior-Bonnet, \textit{The mirror : a history}, p 12
\textsuperscript{12} Melchior-Bonnet, \textit{The mirror : a history}, p 12
\textsuperscript{13} Goldberg, \textit{The Mirror and Man}, p37
\textsuperscript{14} A Cassegrain style reflective telescope intended to be ‘the Great Southern telescope’ this was a failure largely because it had a metal, rather than a glass mirror and required specialist
The use of glass in mirror production has an archaeological record that dates no earlier than the third century AD but examples have been extensively found in Egypt, Gaul, Asia Minor and Germany. These were small, none were larger than 75mm in diameter, and were probably used for adornment rather than function. Glass mirrors have a long and torturous history of development from ancient times. There are only two written references for the use of glass in producing mirrors before this date and their reliability has been debated. Glass was certainly known to the Romans and used to create mirrors by blowing molten glass into a ball shaped support, applying hot lead to the interior, and then bisecting the ball. The resulting objects were small, not terribly bright and extremely curved. They created a convex mirror of the sort familiar to viewers of Jan Van Eyck’s *Arnolfini Portrait* as this basic technique persisted up into the Middle Ages. (Plate I)

During the medieval period in Europe there were various improvements in the production of the tain including the use of tin, pewter and by the beginning of the 16th century, quicksilver (mercury.) Mirror production, however, remained fraught by a number of technical issues. The first difficulty was preparing clear glass without strong colour casts. Stained or coloured glass was far easier to make than clear glass and was therefore extensively used in both decorative and functional windows. Secondly, the production of flat glass presented a number of technical difficulties as it was difficult to produce a uniform thickness or panes of any substantial size (hence the small fragments of flat glass used in stained glass windows.) In this period, flat glass was usually made by blowing molten glass into a sphere and then cutting out a segment from the sphere. Thirdly, there was the problem of making and adhering a metal alloy to the back of the polishing which, for various reasons, it failed to get. Pendergrast, *Mirror mirror : a history of the human love affair with reflection*, pp 182-84

15 Melchior-Bonnet, *The mirror : a history*, p27
16 Ibid.p12 These include a commentator on Aristotle, Alexander of Aphrodisias in the 3rd century AD and Pliny the Elder who attributed the invention of glass to the inhabitants of Sidon. Whether this is a reference to the ‘glass’ of the mirror or simply glass per se is disputed.
17 Ibid. p14 -15
glass to increase its reflectivity. Painstaking and slow, the details of overcoming these barriers is the subject of a number of detailed treatments elsewhere.\(^\text{18}\)

There were two crucial phases in the technical development of mirror production. The first was in the early Renaissance period and relates to both metal and glass mirrors. The second occurred in the 17\(^{th}\) century and was the technical breakthrough that created the modern planar glass mirror. In the first instance, mirrors of both superior quality and quantity being produced the second half of the 15\(^{th}\) century. These included metal mirrors produced from steel alloys that, when polished, provided a remarkably high quality reflection that was also reasonably planar and less effected by colour casts. These became increasingly available during the period, were sold in street stalls by wandering vendors and became relatively cheap. A common tin mirror in France at the beginning of the 16\(^{th}\) century cost the equivalent of wool sweater, five pairs of gloves or a small oak chair.\(^\text{19}\) These mirrors began to become a common household item. As an adjunct to these advances in metal mirrors, by the early 15\(^{th}\) century glass makers from Venice had perfected a glass of remarkable clarity. This glass was so clear that it was referred to a ‘crystalline’ for its resemblance to rock crystal. From this substance, fine planar glass mirrors were made by the manufacturers of Murano and these mirrors became luxury items of the first order.\(^\text{20}\) The secret of their production was fiercely guarded and provided a booming niche industry in supplying the nobility of Europe with these rare and extremely expensive mirrors.

At this time the technical quality of the mirror shifted. It changed from a poor quality, small and generally convex device to a readily available, relatively large (but still not full length), planar instrument available to broader sections of the community. Although there was a distinct difference in quality and quantity between the fine glass mirrors of Murano, and the common metal mirrors of the masses, the fundamental distinction between the Renaissance period and the Medieval was the relative ubiquity

\(^{18}\) For an account of the development of the modern mirror and a detailed history of the Saint Gobain works in France, see Ibid. especially Part One, Chapters One and Two; See also: Gregory, Mirrors, Chapter 3, pp 47 – 73.
\(^{19}\) Melchior-Bonnet, The mirror : a history, p22
\(^{20}\) Ibid.p20
of the mirror along with its increasingly planar, rather than convex, surface. The broader significance of these points will be addressed in the later part of this section.

The second half of the 17th century provided a quantum leap in the production of glass mirrors. In this period an intense effort at industrializing the production of glass mirrors was centred around the monopoly company, the Manufacture Royale des glaces de France at the Saint-Gobain glassworks, founded by Louis XIV in 1669. Although other areas were involved in the production of glass mirror (notably in Bohemia),21 the French made the most consistent and ambitious attempt to break the technical advantage held by the glass makers at Murano. The year before the company was established, France’s best glassmakers had only managed to produce three large pieces of flat glass from a total of 400 attempts.22 The biggest measured 203 cms x 101cms. At this point the best and largest mirrors in Europe were still being produced by the Venetian glass makers of Murano. These artisans continued their virtual worldwide monopoly on the basis of secret production techniques – secrets that continued despite various convoluted plots to lure or coerce these craftsmen away to France and other countries.23

Progress at the Saint-Gobain glass works was slow and uneven. By the late 17th century large flat glass mirrors with a good reflective tain and clear glass were still rare item. At the time, a Countess de Fiesque was recorded by Saint-Simon as remarking:

I had a nasty piece of land that brought in nothing but wheat; I sold it and in return I got this beautiful mirror. Did I not work wonders – some wheat for this beautiful mirror? 24

It is in this context that the Hall of Mirrors at Versailles, presented to the public in 1682 by the architects Charles Le Brun and Jules Hardounin-Mansart must be understood as a spectacular and overwhelming triumph. It was the high-tech wonder of its day and its modern equivalent might stand somewhere between the astonishing formal

21 Ibid.p18
22 F. Fremy, Historie de la Manufacture p82 cited in Ibid.p55
23 Ibid. pp 35 -40
24 Saint-Simon, Memories 1699, (Paris Gallimard 1898) p 652; cited in Ibid. p1
arrangement of Frank Gerhy’s Bilboa Guggenheim Museum and the technological wonder of Microsoft billionaire Bill Gates’ Seattle mansion with its walls of networked plasma-screens. Not only was the effect astounding in its day, and fabulously extravagant, it represented the latest leap forward in visual technology. This despite the fact that the walls were made up of a great number (306 in all) of what would be considered modest sized mirrors in the contemporary context. 

The rarity and cost of planar glass mirrors ensured that they remained a luxury throughout the 17th century. Indeed, the presence of a reasonably sized flat glass mirror in a home ‘indicates that its occupant worked in commerce or as a representative, in contact with the court.’ Literally a reflection of power and wealth.

Around 1700 the Royal company achieved a remarkable breakthrough. Molten slump glass was spread on a table, rolled flat and then annealed (allowed to slowly set) for three days. After cooling it was polished and buffed by two sheets laid together and rubbed back and forth with a sand or iron oxide abrasive between. A foil of tin was laid over one pane, rubbed with quicksilver (mercury) then slowly lifted to drain the mercury. The sheet was then returned to the horizontal and placed under weights to adhere the fresh tain. After a day’s rest, the glass was slowly lifted to stand vertically. This elevation occurred gradually, over 15 to 20 days, so as to allow the amalgam to stabilize evenly on the rear surface of the glass. At any point during this process, breakage was common. This excruciating procedure remained essentially unchanged until the mid 20th century with various technical advances being introduced. Indeed, it was not until 1959 that the next major breakthrough in the production of flat glass was made by the British Pilkington company when they invented ‘float’ glass. Here molten glass was slumped onto liquid tin, annealed and rolled out on a moving production line.

25 No pane of glass was greater than 40 x 60 inches (101 x 152cm). Pendergrast, Mirror mirror: a history of the human love affair with reflection, p152
26 Melchior-Bonnet, The mirror : a history, p28
27 These included improving the reflectivity of the tain, the speed by which it was adhered, improving the clarity of the glass and industrializing the methods of polishing and buffing Ibid. pp 54 -60
before being cut and stacked. The revolutionary advantage here was that the glass did not require polishing.  

The above history, and this thesis, primarily focuses on the development of the planar mirror since this is the most common understanding of the device in the current era and the one most pivotal to contemporary culture. There are however, many forms of the mirror. These include convex and concave mirrors and arrangements of planar mirrors that have specialized applications. Convex mirrors are employed as burning devices and when fashioned into solar arrays may generate power through steam electricity generation or solar cells. They can be used to focus the sun’s rays to provide heat for cooking. They are fundamental to reflective telescopes (the standard form of the device since the late 19th century). They are employed in retro-reflectors in safety and road equipment, and to focus laser beams. Indeed lasers are specialized mirrors – jewel rods with mirrored ends used to amplify light along their length. Lighthouses, new screen technologies, microscopes, holograms and, exotically, solar sails proposed for use in space exploration, are among the many technologies that utilize mirrors.

In the contemporary period glass technologies have developed apace so that planar glass mirrors have become cheap and ubiquitous. Indeed, entire skyscrapers are sheathed with them. Along with these there are now any number of shiny surfaces that fill the world producing reflections in numbers previously unimaginable. Kepler’s innocent observation that the world is a mirror is becoming literally true and with a meaning more precise than he intended. The implications of this state are to be treated later in the thesis, but here it is time to turn to some of the effects that arose from the above history.

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28 Pendergrast, Mirror mirror: a history of the human love affair with reflection, p 261
Shard 1: Reflection

Introduction to Shard One

Mirrors, above all else, reflect. They do so with such efficiency - without scattering light but neatly bouncing it along the axis of its incident - that an image is formed. The instant this occurs we are swiftly drawn into the dizzying worlds of representation and epistemology, worlds we shall come to directly. Meanwhile, the mirror reflects at the sharpness of its tain and in reflecting, neatly divides the world in two. In turn, these reflections have two major aspects. Looked at in one way, a reflection appears as a simple, symmetrical, faithful, double that corresponds to the object it reflects, but reflections are more complex than simple repetitions. Since this corresponding double exists in transmogrified, insubstantial form it is also different from the object it reflects. Just as reflections produce similarities they also produce differences.

In short, the double, the reflection, or the similacrum opens up at last to surrender its secret: repetition does not presuppose the Same or the Similar - these are not its prerequisites. It is repetition, on the contrary which produces the only 'same' of that which differs, and the only resemblance of the different.

Among these differences, mirror reflections also produces asymmetries. Left and right are reversed for example, and a fundamental division between the subject and its reflection is created. A divide is created between the real and the virtual, the object and its image, between what is here and what is over there. What emerges from these aspects are related to issues of representation and will be dealt with later in greater detail. Here, however, it should be kept in mind that the mirror creates two, seemingly contradictory modes of reflection - a repetitive double of verisimilitude, and a series of distinct oppositions, reversals and differences.

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29 Mirrors here are understood as those devices specifically designed to produce an image, not simply the world of ambient light reflections described by Kepler in the introduction.
A device of bifurcation and binaries, there is another dyadic aspect to mirror reflections. Mirror reflections not only receive light, *they project it outwards*. Reflections both passively register light to present an image and they also project this light outward once more into the world. Indeed, without this projection of bounced light, reflections could not be seen. This dual aspect of mirror reflections as image/projection will be discussed in the shard on representation but for the moment, reflections will be considered primarily as images.

Images formed by reflection have another dual aspect arising from their construction in sameness and difference – they are both mimetic and semiotic. For the sake of clarity let us borrow two terms from the semiotician Charles Pierce and call the simple mode of mimetic reflection ‘iconic reflections’ and the other more complex reflections of difference, ‘indexical reflections’. From indexical reflections flow a variety of issues surrounding representation, repetition, symmetry, displaced or transformed space, and the simalacrum. These will all be discussed in later sections. Sovereign amongst them all, the cause of all these effects, is the process of reflection. Reflection, then, is the place to begin.

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31 It might be objected here that the repetition of objects as reflected images in the mirror makes them all iconic. “The image in the mirror is also a ‘sign’ but says the *Logic* ‘a natural sign’. This means that it *does not take the place* of the thing signified (the way the map of Italy takes the place of Italy and the portrait of Caesar, Caesar) but *represents it* by reflecting it.” Stoichita, V. I., *The self-aware image : an insight into early modern meta-painting*. Cambridge studies in new art history and criticism., (Cambridge University Press, Cambridge ; New York, NY, USA), (1997). p184. However, once an mirror image is formed it becomes an image like any other. It thus enters into the realm of signs and is capable of being interpreted and considered along with any other form of image as a sign. Further, the mirror is a cultural object, a reflection a natural one – the reflection in the mirror is already within culture, subsumed into a broader semiotic than simple resemblance. Mirror images, especially planar ones, select particular aspects of reflection to make these a style of reflection. Far from natural, they are determined by a technology designed to produce them in a particular manner. Mirror images also have various metaphoric reading arising from their mechanisms and effects – they are already cultural signs- thus there is a secondary level of reading that acknowledges this transformation as indexical rather than iconic.
Reflection Rays

Ray One: Reflection and Epistemology

“Reflection is undoubtedly as old as the discourse of philosophy itself.”

Issues surrounding reflection are central to the development and current configuration of Western philosophy, and are fundamental to the assumptions of its epistemological systems.

“The concept of philosophical reflection is, as we shall see, a name for philosophy’s eternal aspiration toward self-foundation. Yet only with modern philosophy – philosophical thought since Descartes – did reflection explicitly acquire this status of a principle par excellence.”

The modern era of philosophic thought, according to Rodolphe Gasché, heralds a shift toward self-reflexivity that constitutes human beings themselves as subjects. This causes modern metaphysics to be the metaphysics of subjectivity. Further:

“Self-reflection has informed all philosophy of spirit since Descartes; indeed, it also constitutes the modern concept of history and is the alpha and omega of political philosophy.”..... ‘self-reflexivity remains an a priori structural precondition of what we understand by knowledge itself.”

The metaphor of the mirror has been central in the development of Western philosophy but charting this evolution beyond a generalized sketch is a task is well beyond the scope of this thesis. One could trace this development through the work of Descartes, Locke, Leibinitz, Kant, Hegel, Heidegger, Nietzsche and Derrida. Rather, what is central here, is to establish the extent and role of this metaphor in general terms.

33 Ibid. p13 Note here that Gasché’s contention that the stuff of philosophy is ‘philosophy’s eternal aspiration toward self-foundation’ is disputed by Rorty who argues that this self reflexive shift is what defines the activities of philosophy after the work of Immanuel Kant.
34 Ibid. p 14 - 15
35 Indeed, one has –Gasché’s The Tain of the Mirror and it is unnecessary to reproduce that once more here.
Although as Gasché rightly points out, the mirror metaphor has become central to modern epistemology, its influence may be discerned much earlier, albeit in a modified form.

The notion that our chief task is to mirror accurately, in our on Glassy Essence, the universe around us is the complement of the notion, common to Democritus and Descartes, that the universe is made up of very simple, clearly and distinctly knowable things, knowledge of whose essences provide a master-vocabulary which permits commensuration of all discourses. 36

Although the metaphor may be traced back to Plato and elsewhere, the notion was not configured as it is today. 37 Today the mirror is popularly understood as an objective device, providing accurate vision. For Plato, reflections as they were experienced in the world, along with other aspects of sight, were largely treated as a form of deceptive knowledge, as degraded copies of ideal forms. Of course, Plato did not have access the modern mirror, only dully reflective metal mirrors. “In speaking of the inferior copy or image of the ideal, he considered the mirror, with its poor reflection, the perfect device to objectify this concept.” 38 The eternal mind or soul, in contrast, was a brilliant mirror, capable of producing a correspondent reflection between the mind and the world of ideal forms where true knowledge dwelt. This allowed for a direct form of knowledge that was unsullied by the debased world of experience. It was a form of knowledge by which ‘man’, “would be (able) to look directly at the sun itself, and gaze at it without using reflections in water or any other medium, but as it is in itself.” 39

For Plato it was the rational – the pure reason of the mind - where true correspondence with the transcendent structures of knowledge lay, not in the inaccurate reflections of direct experience transmitted by unreliable (mirror-like) senses. Truth was

36 Rorty, Philosophy and the mirror of nature, p357
37 Goldberg notes that the mirror metaphor was used in India and China to reveal the mystic teaching of Buddhism; it was an emblem of the sun in Egypt; and other examples follow from the histories of non-Western cultures. See: Goldberg, The Mirror and Man, p 26 –36.
38 Ibid. p114
a metaphysical state that reason could grasp only in spite of the sullied physical world and its illusory reflections. In Plato’s famous simile of the cave this is expanded upon:

…the realm revealed by sight corresponds to the prison, and the light of the fire in the prison to the power of the sun. And you won’t go wrong if you connect the ascent into the upper world and the sight of the objects there with the upward progress of the mind into the intelligible region.

This approach to epistemology is understood in the modern period as idealist or rationalist as opposed to the empirical or rationalist approach to knowledge. Over the centuries, it was to infiltrate Western epistemology with a mirror metaphor that supposed any mental reflections arising from the world of the senses were illusory, a distortion of ideal conditions. It found its way into all manner of epistemologies - from St Paul conception that God is only knowable indirectly - “for now we see through a glass, darkly,”

to notions of the ‘Great Chain of Being’ – that supposed all living creatures were distorted reflections of God, the most exact being the mind, the soul, Man himself and then all the lesser creatures. The approach still exists now in the less volubly expressed, but once de rigour, assumptions by Western scientists that mathematics is the language of God. It is a conception that assumes knowledge may be present to the mind through pure reason, as ‘iconic reflections’ arising not from the world, but from an eternal, metaphysical order appreciable only through disembodied reason.

For much of Western philosophy, the nexus between the external world and our mental reflections of it were further complicated by an extramission theory of vision. That is, the proposition that rays beamed forth from the eyes to meet ‘images’ reflecting from objects, the two elements merging to form the images of vision. This

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40 Ibid. 517b, p 320 -1
42 Goldberg, The Mirror and Man, p 116 - 118
44 A logical outcome of this approach was to elevate the mental over the practical and to denigrating the labours of the hand. This tendency is still a pervasive notion in the West and contributed to marginalizing the intellectual worth of artists in comparison to the ‘pure’ disciplines. Until recently this resulted in artists being excluded from the university.
The modern age is commonly thought to be far less idealist in its epistemological approach, substituting a more materialist basis for its philosophies, but this is not absolute, as we shall see. Central to this paradigm shift were the ideas of Rene Descartes and his division between the res extensa and res cogitans: that is, the stuff of the external world and our internal representations of it. This conception retained a Platonic privileging of reason, but provided a link between material experience and mental knowledge. From this gap between the world and our ideas regarding it, emerged a problem that has consumed most of modern epistemology - how do we determine the nature and accuracy of our internal representations of the world with the ‘Being’ of the external world? As we shall see, for Descartes the two realms involved a mirror-like correspondence at a structural, geometric level, but his work opened the possibility of an ever widening gap. By the beginning of the 20th century, two central philosophic tendencies had emerged from this breach – an Anglo-American empiricism that assumes there is some link between world and language but that the ‘mirror’ must be accurate to ensure Truth; and a European (primarily German / French) tradition of Rationalism that turns the mirror inward and assumes that only pure reason can achieve transcendent Truth. 

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45 Jay, Downcast eyes: the denigration of vision in twentieth-century French thought, P29
46 It should also be noted that what emerged in the modern period as the dominant epistemological approach of both traditions, is primarily a visual metaphor, denying or marginalizing sensory input from organs other than the eye. Martin Jay describes the position: “It is the mind that senses, not the body” Ibid. p 75 This conception has found many critics in
Although there is a long history of Western epistemologies invoking the mirror as a metaphor, these primarily served to denigrate any resulting knowledge as a ‘secondary’ reflection. In contrast, the modern shift begins to consider the mirror in another light – as a device of ‘accuracy,’ revealing the world rather than obscuring it. Significantly, the use of this trope became more common at precisely the time that the mirror itself became an ever more refined and available technology. Several studies have pointed to a number of optical devices that coincided with and encouraged new modes of looking prior to and including the Enlightenment period, but these tend to focus on lens and devices such as the camera obscura. What these approaches tend to ‘overlook’ is the older technology of the mirror that was substantially reinvented at this time. Yet it was the mirror that was central to this epistemological refocus as it moved from a ‘dark glass’ to a triumphantly luminous one.

Ray Two: The Correspondent Mirror

How Western epistemology and the mirror reflection metaphor developed can be gleaned from Michel Foucault’s *The Order of Things*. There he describes three paradigms in the history of Western epistemology. The first arose in the medieval period and continued until the mid 17th century. The second he describes as the ‘classical’ that lasted from the mid 17th century until the early 19th century when it was superseded by the ‘modern age’. According to Foucault the first shift saw the adoption of a new episteme based, not on resemblances, but on the division between sign and its referent. The second commences with the invention of “Man”.

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recent years, nonetheless, vision and reflection still remain central metaphors in the Western conception of epistemology and the chief metaphor for these processes remains the mirror. For an overview of these critical approaches see Jay, *Downcast eyes: the denigration of vision in twentieth-century French thought*,

47 Chief among these is the work of Svetlana Alpers, Martin Kemp, Jonathan Crary and Barbara Stafford.

48 The use of the terms ‘classical’ and ‘modern’ by Foucault is a little confusing given most commentators posit the modern age of philosophy commences with Descartes, the same period Foucault calls ‘Classical’.
Prior to the 16th century, he argues, knowledge was configured around the notion of resemblance but this began to alter during the Renaissance.

In the sixteenth century, signs were thought to have been placed upon things so that men might be able to uncover their secrets, their nature or their virtues …It was not knowledge that gave them their signifying function, but the very language of things.49

Signs were based in a system of resemblance. And since signs were embedded in the very stuff of the world, the link between language and the world was self evident and simply waited for discovery.

….language is not an arbitrary system; it has been set down in the world and forms a part of it, both because things themselves hide and manifest their own enigma like a language and because words offer themselves to men as things to be deciphered.50

Thus the brain shaped walnut could be relied on for a cure for headache, and the structure of the microcosm was reflected in the order of the macrocosm. However, because resemblances are never stable, the result was a system which was “plethoric yet absolutely poverty-stricken.”51 The system produced endless, monotonous and self-referential columns of compiled likenesses rather than useful knowledge. “To search for meaning is to bring to light a resemblance.”52

Epistemology was constructed in a world of iconic resemblances where semiosis was equated with mimesis. Although Foucault suggests: “..there is something in emulation of the reflection and the mirror..,”53 his description of this mirror-like arrangement between signs and their referent is much stronger than is generally understood by the modern mind. In Foucault’s description, there is the sense that the

50 Foucault, Order, p35
51 Ibid. p30
52 Ibid. p29
53 Ibid. p19
two realms are *commensurate* rather than correspondent. Signs prior to the ‘classical’ age are more than resemblances, they are almost *equivalences*.

Toward the end of the Renaissance, there was an epistemic shift in the realm of language. A binary system of signification emerged, which divided the sign and its referent (later to be rediscovered by Saussure according to Foucault). There begins a division between the world and human descriptions of it - no longer are the two a single continuum, but rather - “things and word were separated from one another.”

The simultaneously endless and closed, full and tautological world of resemblance now finds itself dissociated and, as it were, split down the middle on the one side, we shall find the signs that have become tools of analysis, marks of identity and difference, principles whereby things can be reduced to order…

Foucault sees this as a massive reorganization “the first and perhaps the most important stage, since it was responsible for the new arrangement in which we are still caught.”

From this fundamental cleavage between the world and our signs, Western culture enters a stage where the relationship between signs and their referents presents a problem. How to determine the nature of these connections? It is at this historical moment, I would suggest, that the mirror metaphor, now reconfigured in the mode of ‘indexical reflection’, emerges as the metaphor best suited to describing the new conditions. In suggesting a correspondent rather than a commensurate relationship, the sign could be considered as linked with the referent but expressed in a substantially *differing form*. That is, the sign was different in form but similar in content to the thing it referred to. The metaphor suggested both a mechanism by which language operates, and underwrites an *associative* correspondence that permits a hermeneutic procedure capable of uncovering the link between sign and its referent. All one needed, as Rorty

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54 Ibid. p43
55 Ibid. p58
56 Ibid. p43
57 Foucault argues that literature is a remnant of the pre-Classical situation where words and the world were not divided. Literature is capable of recalling a situation where description was transparent and linked “It is possible to believe that one has attained the very essence of literature when one is no longer investigating it at the level of what it says but only in its significant form.” Ibid. p43–44
suggests, was a more accurate mirror by inspecting and ‘polishing’ the tain. Significantly, this epistemological shift occurred at the point where mirror technology itself was fundamentally changing.

By the 17\textsuperscript{th} century, recognizing resemblances is no longer the underwriting concern of epistemology, rather the quest is for “more discerning measurement of identity and differences”.\textsuperscript{58} It is this altered view that provides the conditions that spurs the Baroques’ obsession with chimeras and illusions – *trompe l’œil*, plays within plays, cameras obscura, the spilling out from the picture plane, and especially the ‘distortions’ of anamorphosis – all which required a fundamental acknowledgement of the difference between the mode of representation and the nature of the referent. Indeed it is an age that plays endlessly with notions of mirroring and with the apparent contradictions of the mirror, especially those implicit in the two aspects of reflection – iconic and indexical - described earlier.

It should be noted that many features of the modern world often ascribed to the Renaissance, actually occurred later. As Arnold Hauser notes, it was not until the late 16\textsuperscript{th} century and the break-up of the Renaissance that many of these began to be fully articulated.

It is only since the standards of rationalism, naturalism, objectivism, and individualism which were partly created and partly developed by the Renaissance became problematical, and not since their discovery and adoption, that it is possible to speak of modern man.\textsuperscript{59}

In the modern period, the world and its representations are neatly divided in two. Signs stand in relation to their referent in the way the mirror stands to its object. Although this opens up a rupture between sign and its referent it was one nonetheless

\textsuperscript{58} Ibid. p51

assumed to demonstrate some form of legibility, the sign and referent related in a knowable, ordered manner that ensured a measure of correspondence. Descartes himself thought the mind was a continuance of the knowable geometry of the world and thus there existed a mirroring between the world of signs and the world of thought that ensured a correspondence.

Descartes was assuming that the intellectual process …was somehow duplicated in our rationally constructed vision. We are thus not prone to be deceived about distance, location, shape and size because of a correspondence between our unconscious and innate geometrical sense and the geometrical reality of the world of extended matter.  

This rupture however opened the possibility of an ever widening divide between these two worlds and this is precisely what happened. The assumption of a simple correspondence between the architecture of the world and the architecture of the mind was eventually replaced by a hermeneutic enquiry into the nature of this link. The results of this approach were to have profound effects in all areas of culture. Great advances were made in the body of useful knowledge by gentleman dilettantes whose activities, by the late 19th century, would become the academic disciplines that we recognise in today’s universities and institutions. As Gasché has described, a preoccupation with the nature of reflection became central to Western philosophy – one that remains today. These changing conditions describe a shift from, what has been called elsewhere, the hermeneutics of faith to a hermeneutics of suspicion. It is an approach most clearly seen in the work of structuralist thinkers who take it as axiomatic that surface phenomenon are symptomatic signs of deeper structural conditions and that these signs require a hermeneutic, semiotic interpretation in order to make the links apparent. Yet such a system still requires a key that opens the secret order of references that link sign to its signified – a cornerstone on which the structures of knowledge may be built with certainty.

60 Jay, Downcast eyes: the denigration of vision in twentieth-century French thought, p78
According to Foucault, what emerged as a theoretical ‘ground’ to underpin the link between sign and referent was ‘Man’.

Man’s mode of being as constituted in modern thought enables him to play two roles: he is at the same time at the foundation of all positivities and present, in a way that cannot even be called privileged in the element of empirical things.\(^61\)

This construction is one of recent invention according to Foucault, one that emerges in the nineteenth century. It is a transcendent, trans-historical category that previously did not exist, at least in this universalised conception. I would contend that while the construction may have reached its full articulation in the 19\(^{th}\) century, its historical roots were situated in the humanism of the Renaissance.

The foundational image of ‘Man’ seemed to have come to light, simultaneously with developments in mirror technology that produced high quality, large glass mirrors. These allowed a resplendent vision of man to shine forth from the glass - an image that permitted a level of self-reflexive contemplation previously limited by the inadequacies of the technology. Moreover, these brilliant mirrors were being mass produced and becoming readily available to all classes. The historical links with the development of mirror technology are important - particularly in the development of a mirror that permitted a complete, planar vision of the human figure. The image of Man began to emerge at the Renaissance, the historic point at which planar mirrors began to become prevalent, and found its full articulation in the 19\(^{th}\) century when glass mirrors were industrially produced. This is not to posit their role as a sole cause for the emergence of these tendencies, rather they can be ascribed a central influence in a relationship of co-determinacy, not strict causality. Their contribution is in the order of an ‘elective affinity’ as described by Max Weber. That is, a contributing cause sufficient not to be discounted when considering the causes and directions of a society, but one that cannot be established as a sole or absolute cause.\(^62\) After all, for any technological device to

\(^{61}\) Foucault, *Order*, p344
alter culture, it must also coincide with attitudes and outlooks cooperative to its implementation, as Foucault points out elsewhere.\(^6^3\)

Thus the epistemological break suggested by Foucault might be better read not as a strict rupture but as an epistemological shift that maintains the fundamental mirror metaphor but focuses on other aspects of its behaviour. Rather than presenting a simple mimesis as in the model of ‘iconic reflections’, there emerges an associative form of referencing more in keeping with ‘indexical reflections’. Correspondence retains its foundational status, but unlike the direct, unambiguous link found earlier it becomes deferred, cryptic or latent.

Richard Rorty describes a similar schema when he considers the development of the modern empiricist paradigm. Although he is less specific about the timing, in broad terms he is in basic accord with Foucault:

To describe this development as a linear sequence is of course simplistic, but perhaps it helps to think of the original dominating metaphor as being that of having our beliefs determined by being brought face-to-face with the object of the belief (the geometrical figure which proves the theorem, for example). The next stage is to think that to understand how to know better is to understand how to improve the activity of a quasi-visual faculty, the Mirror of Nature, and thus to think of knowledge as an assemblage of accurate representations. Then comes the idea that the way to have accurate representations is to find, within the Mirror, a special privileged class of representations so compelling that their accuracy cannot be doubted. These privileged foundations will be the foundation of knowledge, and the discipline which directs us toward them – the theory of knowledge – will be the foundation of culture. The theory of

\(^6^3\) In an interview with Paul Rabinow, Foucault remarks: “So often in the history of techniques it takes years or even centuries to implement them. It is certain, and of capital importance, that this technique was a formative influence on new human relations, but it is impossible to think that it would have been developed and adapted had there not been in the play and strategy of human relations something which tended in that direction.” During, S. (Ed.) *The Cultural Studies Reader*, (Routledge, London), (1993). Chap. 11, ‘Space, Power and Knowledge’, p169
knowledge will be the search for that which compels the mind to belief as soon as it is unveiled.⁶⁴

Throughout this period then, the mirror metaphor is the underwriting foundation for fundamentally differing philosophical systems. This seems like a contradiction until we consider the adaptability of the mirror metaphor and the fact that although it is often associated with objectivity, the mirror is anything but. This is a topic to be reserved for later sections.

Ray Three: Uncertain ‘Man’, Uncertain Mirror

In the modern era the mirror metaphor has underwritten the Western epistemological approach, as described by Rorty, and is central to an empirical, positivist, scientific paradigm. More recently, however, the conception of ‘Man’ has been thrown in doubt and with it the claim for a foundational ground for signification. There have been a variety of anti-humanist objections to the construction of Man from Foucault and other post-structuralists. Fundamentally, they ask a similar, anti-humanist question - can the construction of Man, with all its in-built and loaded cultural biases really be taken as a transhistorical, trans-cultural figure, at least in its current configuration? Beyond this objection lies other philosophical issues - is there a referent to which signs refer at all or is there ‘nothing outside the text’? Is the mirror image a reflection without a corresponding object?

It is Western philosophy’s search for a foundational ground that provoked the deconstructive method of Jacques Derrida. The tactics of deconstruction devised by Derrida are intimately concerned with reflective metaphors as his inquiry focuses on the foundations of epistemology itself. Derrida takes what seems at first sight to be a simple metaphor and complicates it by inducing a range of playful and multiple reflections on the original text. His is not the singular planar mirror of traditional philosophy but a hall of mirrors of the type found, appropriately, in a fun fair. Deconstruction, if it might be defined, is a tactic of playfully reading philosophical texts against their grain to expose the fact that what they proclaim as their fundamental positive ground (Man, the

⁶⁴ Rorty, Philosophy and the mirror of nature, p163
signified, the mirror etc) is far from being a self-evident positive term. Rather, one term is defined against another (negative) term existing in a binary relationship. This second term is repressed in order to present the first term as a singular, positive, self-evident foundation for a transcendent philosophy, a “theory of knowledge .. that compels the mind to belief as soon as it is unveiled.” Demonstrating the existence of this hidden binary relationship dispels any claim such a philosophy may have to be a positive, self-evident Truth.

Derrida’s deconstruction is, however, a self-reflexive investigation. It seeks not to introduce an alternative transcendental signified, but rather to undermine any such claims. In this, the fundamental binary construction of Western epistemology remains and so too does the reflection metaphor. The metaphor is undoubtably complicated, called into question, deconstructed, yet it is retained as the fundamental organizational structure of Western epistemologies. It remains, “the new arrangement in which we are still caught” in the words of Foucault.

In a similar manner, there are a number of philosophers of science who call into question any simple, empirical account of scientific method that assumes mathematics or empirical observation are also mirror-like and can be honed to reveal the fundamental truths of the universe. Thomas Kuhn, Paul Feyerband and Imre Lakatos argue that science and its claims to correspondence are not simply based on a naïve correspondence or falsification theory. Rather, as the history and philosophy of science demonstrates, scientific paradigms operate within metaphors and are subject to cultural influences and social interests. These philosophers argue in effect that science is

65 Ibid.
66 Derrida would dispute the neatness of this account as too reductive. He proposes a ‘gesture’ rather than a method, to avoid affirming that which he seeks to discredit.
actually more akin to a form of literature, full of metaphor, simile, confabulation and interpretation based around certain material facts. Ultimately there is no recourse to absolute truth, no transcendent truth or model to which science gets ever closer but rather “… the notion of accurate representation is simply an automatic and empty compliment which we pay to those beliefs which are successful in helping us do what we want to do.”68 That is, the truths of science are not foundational but simply pragmatic solutions, rather than answers. Their success does not indicate they are in concert with universal Truths but that they obey the material necessities of the world. Rather than metaphysical insights that transcend the limits of reason, they are achieved by trial and error, and mirror back our investigative methods. As Hannah Ardent puts it:

Here again, we may for a moment rejoice in a re-found unity of the universe, only to fall prey to the suspicion that what we have found may have nothing to do with either the macrocosmos or the microcosmos, that we deal only with the patterns of our own mind, the mind which designed the instruments and put nature under its conditions in the experiment…69

The end of the planar mirror metaphor of direct epistemological correspondence is potentially liberating, undermining as it does, ideology’s claim to authority, however, this is a double edged sword. If no one epistemology can claim to be the true mirror, then no end of potential mirrors may emerge, each strident in their claim to truth – a condition abundantly manifest in the current era. From the fragmented state of current epistemology, a great number of ideologies have emerged to declare themselves as authoritative reflections of true knowledge – whether economic rationalism, new age religions, triumphant evangelical Christianity, fundamentalist Islam, militant Judaism, globalization, science itself, philosophy itself – any number of candidates, all claiming an authority that transcends the uncertainties of the language in which they find their expression. Each seeks to establish themselves as Derrida’s ‘transcendental signifieds’ – the true mirror by which the world may be known. Even if these false claims to a totalizing vision of correspondence are easily seen as transparent and flimsy, a more subtle problem emerges. Given a fundamental schism between our

68 Rorty, Philosophy and the mirror of nature, p10
language systems and the world they describe, given the absence of a solid ground on which to establish a ‘foundational knowledge’ by what criteria do we judge their claims as false? Worse, how do we establish the validity of less partisan epistemological systems such as those of psychology, physics, philosophy – in short - all the sciences physical and human? How to authoritatively refute their erroneous claims to knowledge beyond the pragmatic? It is this state of affairs, one where the metaphor of the mirror can no longer claim to authoritatively underwrite epistemology but remains the dominant metaphor in an age of competing ideologies, that defines the broad knowledge problems of our age. This is, I would suggest, the crisis in knowledge of our age and no satisfactory answer has emerged.

From this evidence it is clear that any simple consideration of epistemology-as-mirror has been smashed. What now exists is a far more contingent notion of knowledge - a fragmentary state with no certain ground or ‘transcendental signified’ guaranteeing its validity in absolute terms. This becomes the central problem of contemporary epistemological thought. On the one hand, we do not want to mistake language as absolute and determining truth: “The sculptor of language was not so modest as to believe that he was only giving things designations, he conceived rather that with words he was expressing supreme knowledge of things …”

On the other, to simply say that language bears no resemblance to the world, that the rupture between signs and their referent is complete, seems to fly in the face of the success of scientific method among others. My own argument would be that there is indeed, no recourse to absolute Truth, only pragmatic outcomes when theory matches material conditions. Positive outcomes from this approach may demonstrate the practical effectiveness of the empirical method and make obvious what a powerful tool our language systems are, but this does not establish a case for an ultimate, transcendent Truth. Rather what emerges is a pragmatic, limited, contingent truth based on an approximate, correspondent relationship between language and the world it describes. A relationship that is analogical rather than determinate, one compelled to metaphor. Thus it is possible to fall back to the mirror metaphor once more as an indexical indicator – useful knowledge is

71 This is broadly the position of the pragmatist philosophers John Dewey, William James, Thomas Kuhn and Richard Rorty.
“kind of like” the things it describes but in a different form. This sounds far less impressive than a claim to transcendent, foundational knowledge, but several centuries in which philosophy has failed to produce such a compelling ‘ground’ does not argue strongly for its existence.

Ray Four: The Mirror and ‘Civilization’

The mirror and urban societies go hand in hand. Reading between the lines of the introductory history of the mirror presented above, reveals a link between mirrors and what was, until recently and unselfconsciously, referred to as ‘civilization’. An uncomfortably triumphant term, its positive proclamations rely on suppressing its binary pole – barbarianism – another name for all other social orders. Ray Four ‘Civilization’ is better substituted for the more descriptive term – urban societies (or more accurately, societies with a high level of labour specialization, intensive agriculture or industry, with complex urban structures but hereafter referred to as urban societies for convenience). Yet the self appointed term ‘civilization’ does reveal a narcissistic tendency implicit in its assumptions that may have much to do with the mirror.

The transformation from tribal to urban society (a shift that has occurred many times in many different forms) is a point where the world of humans and nature begin to separate to become distinct spheres. In the West this process was characterized by what Karl Marx described as new modes of production that result in surplus capacities, exchange economies and the production of urban city spaces. Henri Lefebvre has described as the ‘production of space’ and more specifically as ‘abstract’ or ‘social’ space. It might be argued that the production of a mirror requires

72 It should be noted that this civilization/barbarian distinction is not exclusive to the West but was also found in ancient Greece, China and Japan. See Lévi-Strauss “The anthropologist and the human condition.” Lévi-Strauss, C., The view from afar, (Basic Books, New York), Translation of: Le regard éloigné., Trans. Neugroschel, J., (1985). p25


74 Lefebvre, H., The production of space, (Blackwell, Oxford, OX, UK ; Cambridge, Mass., USA), Translation of: La production de l’espace., Trans. Nicholson-Smith, D., (1991). Lefebvre claims that from the moment that humans made tools and language an irreversible split commences. “...humankind is born in nature, emerges from nature and then turns against nature with the
a number of skills that can only emerge when conditions of labour differentiation and specializations are present, and this is so. Only urban societies contain the requisite conditions to produce mirrors. This thesis does not argue that it was the mirror that caused the creation of urban societies but just as urban societies turned away from nature to look self-reflexively inward at world of constructed space and culture, so too does the mirror arise at that historic moment to catch their gaze and reflect it back.

Ray Five: Seeing the Self: the Mirror, Verticality and the Divorce from Nature

One of the pivotal differences between tribal and urban societies relates to the role of the individual. Indeed, the concept of the individual as a strongly differentiated autonomous subject – or Self - does not exist in tribal societies since the identity of a particular tribal member is subsumed within the collective culture. “Man is at first a wholly communal being; individualisation is a historical product, associated with an increasingly complex and specialized division of labour.” Just as the individual is woven into the weft of the collective, the collective is enmeshed in the broader weave of nature. Tribal groupings live within, and directly from, the natural world, through hunting and gathering. In these circumstances, not only is the conception of the Self familiar to contemporary Western societies as a self-motivating, autonomous individual impossible, so too was an actual and complete image of the Self in the absence of a mirror.

Lacan’s notion of the mirror phase as the defining moment of self-recognition in which the ego is both differentiated from the world and first enmeshed into the socially determined world of language, sees the subject moves from the world of the imaginary to the world of the symbolic. It recognizes the central role played by the mirror in the creation of the Self as constituted within the social. It is also an unfortunate results that we are now witnessing.” Lefebvre further argues that it is the West in particular that has globalized this essential violence and rupture p109.

75 Giddens p24
indication of the central role the mirror plays in the psychological construction of the modern individual, however, Lacan’s theory also applies to tribal societies in a limited form. Here the mechanisms of the mirror are substituted for the reflection of the self in the Others’ eye. In the absence of an actual mirror therefore, the definition of the self is entirely constructed within the network of interactions and interrelationships of the tribe. The image of the Self is based in the mirror of the Other, not the mirror per se (a role that was always symbolically present in Lacan’s schema.) The role of the social in the definition of self persists today, of course, but is mediated by the alternative of seeing oneself directly in the mirror.

Although the mirror is absent in tribal societies, reflection was not. It was still possible for a tribal person to see themselves, not solely through the mirror of the other, but in natural reflections produced by still bodies of water. Unlike the mirror that stands obligingly upright, still water lays flat, and such a view would inevitably be a horizontal one. In addition, light would generally come from above, casting the reflection into shadow. To gain a glimpse of the self the viewer was compelled to lean over the horizontal puddle or pool and thus the view of the self was always partial, never complete. Further, water is never still, the slightest breeze will ruffle its skin and ripple the reflections that lie on its surface. The self seen in this way alters shape at the whim of natural forces. Just as a tribal person’s image of the self was constituted within the ‘Others’ of the tribe, so too was their self image subjected to the mercy of the elements. In this schema, one must bend down before the water and before Nature to glimpse the Self. The image of self was framed by reflected natural surroundings and submerged features visible through the water were superimposed with the image. Horizontal, dim, indistinct, framed within nature - the self-image and nature were aspects of the same continuum as indeed, were the worlds of reflection and nature, and the community and nature.

Important here is the fact that mirrors allowed a fundamental change in the vision of the self - Mirrors allow a vertical image of the viewer. This shift from horizontality to verticality in the image of the self is, I would contend, a major shift in the history of vision. It represents a fundamental shift in the point of view. As opposed to the tribal
person, the urban viewer is not required to look downward hunched over a puddle or pond to get a dim, backlit view of the self but could stand proudly upright. No longer need one bow down before nature in a pose of supplication to be granted a fleeting glimpse of the self, but one might stand or sit at leisure and command reflections to appear by one’s will. It is a significant triumph over nature and visibly divorces the Self and the natural world. It is a shift that will play into, and underwrite, an increasing rift between the two spheres of human ‘civilization’ and the world of nature. Available to urban societies, this clearer view of the self, was still not perfect due to the colour casts of the metal, its relatively poor reflective capabilities and its small size that provided an incomplete vision of the entire body that would only begin in the 17th century and not become common until the 19th century. Nonetheless, these mirrors still provided a relatively clear, differentiated image of the self. The self was no longer necessarily framed within nature but more likely, within the confines of a room or dwelling – in short - within the constructed world of an ever distanced culture removed from the natural world. It is a vision that also allows for a new construction of the viewer as an independent Self, while simultaneously capturing an essential difference between tribal and urban societies.

Ray Six: ‘Accurate’ Mirrors and Emergent ‘Man’

As noted, although there had been planar metal mirrors since ancient times, it was only during the period of the early Renaissance that these gained a superior clarity and began to become commonplace. There had been fair quality glass mirror in the medieval period, but these were radically convex in shape. Such mirrors provided a clear and relatively bright reflection yet, while they could be positioned vertically, they reflected a disproportionate amount of their surrounds. Unlike small planar mirrors, they were capable of reflecting the whole body but only with severe ‘distortions’.

The convex mirror concentrated space and offered a global and spherical view of the world, embracing many perspectives, but its roundness distorted the image. The plane mirror, on the other hand, offered an exact but only partial

77 A time too when a more fully articulated notion of the self arises in the ideology of bourgeois individualism. Again, the mirror was not the sole cause of this, but was undoubtedly an influence.
image, a framed vision from a single point of view that controls what is seen like a stage director. A model of knowledge that is no longer symbolic and analogical but rather critical and discursive, the mirror finds its place in a new philosophy of representation, responding to its own rules and in addition to its role in organizing space, it revels in the pleasure of the spectacle. 78

Although it is commonly accepted that convex mirrors produce distortions, this is only so if we accept the notion that the planar mirror is distortion free. In actual fact, since neither are equivalent to human vision, both may be considered ‘distortions’. It is the historical triumph of a particular mode of vision, based in a linear perspective that emulates planar mirror images, that leads us to think that anything outside this paradigm as distorted. In fact, this is only a question of privileging one aspect of vision over another: a key point discussed in the following ‘shard’ on representation. 79

The mirror not only underwrote the construction of linear perspective but permitted an increasing awareness and visibility of the human subject as the central measure of all things. The emergence of Humanism is a defining aspect of the epistemological shifts that occurred in the Renaissance. 80 In Leonardo’s Vitruvian Man,(Plate II) Man stands as the centre and the compass of the world. The proportions of man harmonize with those of underlying, mathematical structures. Man and the hidden harmonies of the world are thus a mirror of one another. While still retaining vestiges of Platonic idealism at this point, the figure of ‘man’ has shifted to centre stage. Even if the grand narratives of the age were consumed with religious strictures and the adoration of a classical past, humanism was a mirror that began to focus human

78 Melchior-Bonnet, The mirror: a history, p128
79 Note here Panofsky, E., Perspective as symbolic form, (Zone Books ; Distributed by the MIT Press, New York Cambridge, Mass.), Translation of: Die Perspektive als symbolische Form., trans. Wood, C. S., (1991). p34 “He [Johannes Kepler] had been led by the rules of painterly perspective to believe that straight is always seen as straight, without stopping to consider that the eye in fact projects not onto a plana tabella but onto the inner surface of a sphere. And indeed, if even today only a very few of us have perceived these curvatures, that too is surely in part due to our habituation – further reinforced by looking at photographs – to linear perspectival construction; a construction that is itself comprehensible only for a quite specific, indeed, specifically modern, sense of space, or if you will, of the world.”
80 Although the emergent humanism of the Renaissance would not find it full articulation until the invention of ‘man’ and the ‘human sciences’ in the 19th century, as suggested by Foucault, the shift in the episteme commenced at this moment.
attention back on itself. Whereas once the gods were a mirror for human behaviour, in this new epoch, Western humans would eventually come to view themselves as gods and the gods as a pale reflection of humans. It also initiates what would become a pervasive narcissism articulated in the ideology of humanism.

The availability of planar mirrors strengthened and confirmed the particular form of narcissism that emerged at the Renaissance. Western narcissism, however, has deep roots. It should not be forgotten that the foundation mythology of Christianity is a mirror myth that plays with notions of representation. God makes Man in his own image and likeness, (later he splits this being into a complimentary oppositional reflection when he creates Eve from Adam.) Adam’s major task in the Garden of Eden is to name the things therein. In this way everything is drawn into the net of words, reflections of Man’s power over them. It was a language moreover, that was assumed to seamlessly weld sign and its referent.\(^\text{81}\) Reflection is at the very heart of the Western tradition.

Such narcissism, and in Gasché’s terms, self-reflexivity, became more common by the Renaissance. Not only were more mirrors available, Humanism engendered a mode of thought that saw the world the rightful mirror of the human. Just as Da Vinci considered the mirror as the artist’s true teacher, and cast ‘Man’ as the measure of all things, so this has continued and grown into the present era. It also deepened the growing schism between man and the world of nature that would become a foundation stone of modernity. Today, the result is that the world is seen as a mirror of the human. Where the world is foolish enough not to agree sympathetically with ‘Man’s’ view of himself, it is quickly reconstructed and put to rights.

\(^{81}\) It was the diachronic task of linguists to recover this lost first language. Even after the religious element was abandoned, the tendency remained - linguists still searched for an “Ur” language from which all others evolved until (and even since) Saussure's synchronic reordering of the discipline.
Ray Seven: Bourgeois Humanism and the Individual

With the increasing size of plate glass mirrors in the late 17th century humans were afforded with their first clear, ‘undistorted’, top-to-toe view of themselves. From that time it begun to be possible to see the whole self clearly and without angular distortion. The self stood brightly lit, upright, gleaming, whole and surrounded, not by nature itself, but a second nature, a sumptuous culture. The divorce from nature was hastened and the triumph of Western culture over the natural world was accelerated. The autonomous human was no longer congruent with the world of nature, or subordinate to it, but a distinct and controlling force that was superior to nature. Descartes relocates the fundamental locus of knowledge from the world onto the self-conscious, subjective self. There arises along with this a fabulous new vision in the mirror, a new notion of the self as a contained and complete (bourgeois) individual. Tied to the simultaneous emergence of a wealthy mercantile class hungry for political power to compliment their economic clout, the bourgeois individual would soon motivate mobs to tear down the old order and help raise this new class up to seize political power and institute its own particular vision of the Self as the founding truth of Western culture.

Before this revolutionary moment, in the Mirror Hall of Versailles, strange new visions were revealed. Mirrors coating entire walls created a glittering screen that reflected complete rooms and all within them. Such a sight was unprecedented and was the direct result of the recent invention of the large-scale glass mirrors. Here it was possible for courtiers to see themselves and the King at the same time, within the same plane and on the same level. It was a vision of equivalence and, even if it exposed differences, it simultaneously allowed a startling comparison between Monarch and courtiers. How it must have thrilled. How it must have got people thinking…. It is a vision of poignant possibility, one that showed with startling clarity the great similarities and the differences of the age, all compressed onto a single plane. It is hard not to imagine that this emblematic vision did not influence the subsequent events in the

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82 Sumptuous, since large mirrors at this historic point were still extremely expensive.
political sphere. Although there had obviously been revolutions that overthrew Kings before, none had the particular emphasis on the rights of the individual as did the bourgeois revolutions of the 18th century. Neither had a new class usurped the monarchy. Nor did they posit the notion that ‘Man’ was a universal, category - a sentiment enshrined in the writings of Voltaire and in the American Bill of Rights that declared “all men are created equal.”

It might be noted that there is a strong correlation between images of the self and wealth. For most of the history of Western culture, only the wealthy could hope to possess an image of themselves. This gradually diminished over time, so that, in the present age, possession of such images is common. Even following the 17th century invention of a viable production technique for plane glass mirrors this tendency continued. All image producing technologies seem to follow the same course and so it has continued to the present day. Cameras, moving films, video, digital imaging equipment - all began as very expensive devices that gradually become cheaper and more ubiquitous. The effect is to initially restrict particular modes of imaging the self (and others) to a particular class before becoming more common. Control of these new technologies of imaging the self thus filters down from the same location as political, social and economic power and are instruments of that very power – the power to picture the world in a certain way.

Ray Eight: Mental Reflections/Mirror Reflections

The metaphor of the mirror has become hopelessly entangled in our conceptions surrounding mental processes, in particular those of memory, speculation, contemplation and perception. When we think, or recall, or consider, we reflect. Such mental processes are not reflections. Their fleeting and insubstantial nature recalls the efflorescent lack of solidity evident in mirror images which is, no doubt, a primary reason for the analogy. Like the world seen in the mirror, mental phenomenon are present, but impalpable and distant, immediate but unfixed. This analogy, while

83 Despite this pragmatic political rhetoric, the new bourgeois class did not as a whole welcome universal suffrage or other broadly democratic conventions.
evocative, also contributed to a fundamental error embedded in epistemology from Plato on. Our thoughts are not simple mirror reflections but more like refractions in the prism of the mind. Indeed, they are much more than just a visual metaphor would allow, the body and all its senses contribute to thought but this is generally repressed from the dominant visual metaphor. The function of the eye bears some resemblance to the mirror but from the retina on, conceptual processes radically transform the sense data of perception. Thoughts do not reflect, or even image the world, but rather, imagine the world. The process is not one of mimesis but of interpretation and invention – not unlike the processes of art.

Yet as indicated earlier, when the mirror metaphor is considered as an ‘indexical reflection’ it can be adapted to fit this state of affairs. Because the mirror metaphor survives there is the ever present confusion between its two states – iconic and indexical modes of reflection described above and between ‘natural’ reflections and constructed mirror reflections - so that what should be seen as an interpretative process of an indexical nature is often mistaken for a simple (and natural) mimetic relationship.

Ray Nine: The Mirror and Anthropomorphism

Arising from the necessities of historical materialism, humans have always reshaped the world to suit their ends and in this interaction, they anthropomorphize it. That is, they not only consider aspects of it human - subsuming nature into the anthropomorphized myths, narrative and rituals of culture\(^\text{84}\) - they also alter it to be more congenial to human needs. In the modern era, this has reached such heights that we may force once feared nature to bow to our sovereign sway. This often hubristic, and ultimately futile, attempt to control and remodel the very stuff of existence, is to make the world a mirror of ourselves and our desires. It is a mode of colonization - the colonization of earth by humans - whereby the human species has occupied and transformed the world.

\(^{84}\) An example of this is what Ruskin termed the ‘Pathetic Fallacy’ - projecting onto nature the very thing it does not have, human emotion. A common trope of the Romantics, nature itself was looked at as if it were a mirror, its agitations and clemencies an analogy for the shifting moods of the human mind.
This seems to be a typically modern approach. Traditionally, tribal peoples also reshaped the world for their own purposes, but the natural world was not considered to be mere fodder for their wants. Rather most tribal myth systems demonstrate the imperative for humans to operate in harmony with the environment, indistinct from, or complimentary to, nature. With the construction of humanism and the Cartesian tradition, comes the notion that man should be the measure of all things. It might reasonably be suggested then that all things should be made to measure for man – and so it is. Also emerging from the Renaissance was a set of powerful conceptual and technological tools with which the world might be refashioned. The development of perspective, and the rationalized space of the Cartesian grid, allowed both conceptual space and actual space to be transformed.

Thus the history of perspective may be understood with equal justice as a triumph of the distancing and objectifying sense of the real, and as a triumph of the distance-denying human struggle for control; it is as much a consolidation and systematisation of the external world, as an extension of the domain of the self.85

This anthropomorphism does not stop at the boundaries of cities but is expressed throughout the entire planet. Thus are trees turned into words, fields concreted, seas plundered, whole environments reshaped. This grand transformation is ongoing and like the process of colonization, which it not only resembles but is part of, results in the world initially being transformed to a mirror of human needs and desires, and then the inhabitants dwell in that mirror. Living there, they may ignore the savage impositions of nature to ever more stridently reflect their own interests and vanities in a self reflexive sphere contracted to give little hint of a world outside itself. If it continues, in the future we will all live in space stations, but here, on Earth.

In the solipsistic self reflection of the modern era, culture is often mistaken for nature. We look out into the world and see only ourselves mirrored back. All the stuffs

85 Panofsky, *Perspective as symbolic form*, p67-8
of the world seem made to measure for us – all of space and all of time – but geological
time will shatter the illusion.

Ray Ten: The Mirror & Cultural Determination

Culture is, in part, a mirror reflection. Cultural traditions are mirrored reflections of past cultural traditions that continue into the present. To look historically at a cultural tradition is like looking into a mirror that faces another mirror. There is an imperfect, infinite regress with the closest images clearly visible, while those in the distance becoming blurred, obscured and bending out of the frame so they are lost to sight.

Cultural traditions must be repeated in order to survive. Culture is not only mirrored through time but is learnt in the present by a process of mirroring. Any cultural tradition and its associated activities are learnt by mirroring the activity. Like an echo, or like the slightly altered images in each reflection of facing mirrors, over time this may cause ‘distortions’ – permutations and alterations, and these are the ‘Chinese Whispers’ of culture.

All culture is learnt and practiced by mirroring. This is true at both the social and individual levels. Historically, when the will of a ruling groups, their ideology and culture, are efficiently reflected throughout the general culture, there is a cohesiveness to a culture and a period of conformity – what Antonio Gramsci has called a ‘strong hegemony.’

Additionally, as infants we learn through mimicry. Spoken and written language is based on mirroring repetition and as noted early, is partly defined and ingested through the operations of the mirror according to Lacan’s schema. More prosaically, in other areas of learning, the infant repeats, copies and mimics until competency is achieved. This mirroring is ongoing through life as seen in the processes of education, training and social interactions. Although not so overt or slavishly

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repetitious, the strictures of emulation are embedded in academic disciplines as ‘rigour’. Each new skill, each new task involves an initial period of mimicry. Later, if they are capable or talented, the student of a discipline may develop new aspects of the practice itself - new techniques of casting metals, new words, new tools, new images. As important as these are, they are located within the frame of the broader cultural mirror that defines the discipline.

Neurophysiologists have located what they believe is the physical cause of this capacity for emulation. Dr V. S. Ramachandran reveals there are “mirror neurons” located in the human brain whose function is to record and emulate cultural behaviours. These are also known as the ‘monkey-see-monkey-do” neurons. Studies by neurophysiologist Giacomo Rizzolatti noted that when a monkey reaches out to grab something, or perform a similar motor-action, neurons in the frontal lobe fire. These are the motor command neurons and they fire to signal the body into action. Rizzolati found that these same neurons will fire in a monkey simply watching a first monkey perform a particular action. This mirror reaction results in a response that is substantially the same as the observing monkey actually performing the action instead of merely seeing it. This mechanism not only explains the power of visual images (they provoke a response akin to actually preforming the action) but it also provides the mechanism for cultural mirroring.

I also want to argue that these neurons may have played an important role in human evolution ….One of the hallmarks of our species is what we call culture. And culture depends crucially on imitation of your parents, of your teachers and the imitation of complex skills may require the participation of mirror neurons. So what I’m arguing is somewhere around 50,000 years ago maybe the mirror neurons system became sufficiently sophisticated that there was an explosive evolution of this ability to mime complex actions, in turn leading to cultural transmissions of information which is what characterises us humans.

88 Ibid.,
Culture seems to be a mirror within which we mirror culture on the basis of internal mirrors.

Ray Eleven: The Mirror and Objectivity

The mirror seems impassive and impartial. It receives light and produces images yet cannot determine the circumstances of this exchange. It is subject to reflect whatever object stands before it. This mute receptiveness – the mirror cannot adopt its own position and fixedly records all that passes before it – has gained it a reputation for objectivity, indeed, it has become the emblem for objectivity in the modern era. Thus creatures as diverse as Andy Warhol and tabloid newspapers parade beneath its banner. Both wish to claim an instant responsiveness, an up to date relevance with matters before us, and a commitment – more – a pathology, to passive objectivity, neutrality and Truth. While the mechanisms that govern the mirror may indeed make it passive, the objectivity of the mirror is fallacious. A mirror must be positioned and this will determine the nature of its reflections. The composition and form of the mirror will likewise shape the nature of its reflection. Further the assumption ignores all the indexical readings that emerge from the resulting image that are embedded within specific cultural readings.

For Plato, as the mirror produced mere representations of the already debased representations of a metaphysical world, it was not an instrument of objectivity but of illusion. In the wake of Descartes this began to alter and in the Enlightenment period, the mirror was reconsidered to provide a metaphor underwriting the empiricist paradigm, a notion that guaranteed a correspondent, singular, and referential Truth.

The Enlightenment project, for example, took it as axiomatic that there was only one possible answer to any question. From this it followed that the world could be controlled and rationally ordered if we could only picture and represent it rightly. 89

The mirror thus became an emblem of objectivity, and this naïve conception of knowledge still persists in the popular imagination.

89 Harvey, *The condition of postmodernity: an enquiry into the origins of cultural change*, p27
For there to be an image in the mirror there must be an object before it. Indeed, one reason the mirror is evoked as a metaphor to explain the process of signification is the requirement that its referent be immediately present. The schema would like to suggest that, like the mirror, an active presence underpins the relationship between sign and its referent. This assumption of a ‘transcendental signified’ is precisely what Derrida called logocentric, and will be taken up in a later section.

Despite this conception, mirror images are not direct and present, and the relationship between image and referent is not simple. The neat and abiding link between mirror image and object is generally understood as being underwritten by the inviolable rule that the angle of incident must equal the angle of reflection – but this is not so straightforward. Mirror images are unique among all other forms of representation in one aspect of their image production – the absolute necessity of a viewer to create an image. All other image forms have an existence even when a viewer is not present. Unless we are Bishop Berkley, we accept that a painted image will continue to exist even in the absence of someone to view it, so too with all other representational forms except the mirror. Indeed, it is not strictly true to say that mirrors produce images. A mirror only receives and reflects light and it does so evenly across its surface. For an image to form in a mirror a viewer must be present. The position of the viewer will determine what the angle of reflection will be and thus determines the complimentary angle of incident. Until this occurs there is a (nearly) infinite number of possible images that might form in the mirror but none in actuality. There is no image in the mirror unless there is someone to view it, only a range of possible images that might coalesce into a single image. 60 This absolute requirement that a viewer must be present to bring forth an image in the mirror is true of no other form of image, except perhaps (and only if we consider them as representations), that of dreams and other internal visions. What this also indicates is that mirror images are of necessity subjective and are thereby automatically part of a broader cultural, semiotic structure. Mirror images are not neutral but part of the complex web of cultural representations and understandings,

60 Rather than Bishop Berkley being the key here, the situation is better understood in terms of quantum dynamics. There are multiple probability waves regarding the potential images within the mirror and all but one of these collapse at the moment of perception.
because the relationship between a referent and its representation is strictly determined by a viewer – one who stands within culture and its structures while looking toward the mirror.

A second aspect that complicates the simple notion of linking a mirror image and its referent by corresponding lines of incidence and reflection emerges from recent physics. Quantum physicist Richard Feyerman in his book *QED* explains these interactions as follows. Light strikes a mirror as photons all over its surface. There is not a strict relationship between the angle of incidence and the angle of their reflection, but photons are in fact exchanged within the glass surface (the additional energy of the photons causes electrons present in the glass to be excited, transformed and emitted as photons.) These emanations occurs from *all* points on the glass, and in a random way, while preserving an equivalent energy exchange between photon/electron/photon. However, due to the limited velocity of light, high though it is, some photons will reach the eye of a viewer faster than others. Since the shortest distance between two points is a straight line, the released photons seen by a viewer will be those that do equal the angle of incidence directly opposite that of the viewer's eye. This explanation radically transforms our understanding of the actions of light at the quantum level. Reflection is not a simple correspondent 'bounce' effect but a complex web of random exchanges. Yet while this preserves the observable conditions of light at the macro world, there is a fundamental reconsideration of its fundamental, physics and dynamics. The angle of incidence may still equal the angle of reflection, but only due to the dynamics of observation, not as an actual condition of physics.\(^91\)

At the heart of the mirror is not a passive objectivity but a fundamental subjectivity. Reliant on the intervention of a viewer, and random at a fundamental physical level, the mirror is, ironically, anything but objective. Instead it is configured within a complex subjectivity and contingency. It is this reconfigured notion of the mirror that is implicit I would argue in the subjective and relativistic formulations

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evident in Modernist art and beyond, but which has often failed to reach the level of popular consciousness.
Shard 2: Representation

Introduction to Representation

Just as mirrors reflect, so too do they represent. A reflection in a mirror is no longer a simple reflection but a representation. Constituted within a specific, culturally determined technology of image production – the mirror – a reflection is no longer a ‘natural’ image but a constructed one. The differences between natural reflections and those of the mirror are immense but are often confused. Because reflections are natural phenomena, reflections seen in a planar mirror are often mistaken as natural, rather than the representation they actually are. Likewise the notion of mimesis has become confused with the image seen in a planar mirror. Any reflection could be considered mimetic, even if ‘distorted’ by curves or other ‘disruptions.’ The reflections seen in a planar mirror should be seen for what they are – a particular style of mimetic representation.

Representation has a very long history, but what is now referred to as ‘Art’ is a recent invention. Art emerged at the time of the Renaissance but was only fully articulated around the late 18th, early 19th centuries. Those objects from the past often referred to as ‘Art’ served other purposes, embodied different social needs and concerns, and were constituted in other ways. Nevertheless, even if they cannot be considered Art in the modern sense, it has been a feature of human societies to produce objects and images that iconically represent aspects of existence. True, these may seem highly stylized but despite this, their iconic resemblance to their referents makes them recognizable – even if we are not aware of the deeper significance they held. Thus the charcoal bison of Lascelles, the animal hieroglyph of Egypt and the daubed creatures of Australian Aboriginal rock paintings are all instantly recognizable to the modern eye, despite their dramatic stylistic variations. The fact that such forms can communicate across such vast times frames, geographical distances and diverse cultures is both

92 Staniszewski, M. A., Believing is seeing : creating the culture of art, (Penguin, New York), (1995). has a very concise method of presenting this point. She presents a range of famous images produced prior to the 18th century and summarily declares them not to be ‘Art’. pp 1 - 20
extraordinary and completely banal. 93 Further, if these images seem stylized it is because of the current dominance of planar mirror images. The realism of the Renaissance and its inheritors is also a style - its dominance may make it appear neutral, indeed, natural - to our eyes, but it is a style like any other.

Following Peirce’s semiotic schema once more, visual representation may take three main forms - iconic, indexical or symbolic. How mirror images relate to these three modes is nicely described by Victor Stoichita:

“The field that involves the composition of the trinomial map/painting/mirror is not that of mimesis, but that of semiosis. It is when map, painting, and mirror are signs that they have something in common.”.....

“If we examine the trinomial more closely, we are struck by the weakening of the resemblance between sign and thing signified. Mirror-painting-map or map-painting mirror are, therefore, three forms of representation, distinguishable through their divergent progression. The image in the mirror (more ‘image’ than ‘sign’) is the exact opposite of the map (more ‘sign’ than ‘image’). As far as painting is concerned, it is the middle term between the representations’ cartographic form and the specular form of the representation.

The image in the mirror is also a ‘sign’ but says the Logic [Logic of Port-Royal] ‘a natural sign’. This means that it does not take the place of the thing signified (the way the map of Italy takes the place of Italy and the portrait of Caesar, Caesar) but represents it by reflecting it. For the mirror to be a representation (and not simply a polished and framed surface), the thing represented must be positioned

93 It is also an argument for the existence of a determining structure of human vision that is trans-cultural, trans-historical and based in a representational realism. Martin Kemp admits that there is ultimately a subjectivity and variety to visual experience embedded in culture and in individual response, impossible to verify as commensurate but concludes: “But I find it impossible to accept, on pragmatic and biological grounds, that no core of universally stable potentialities arises from the equipment with which man has been provided to make functional sense of the natural world. The potentialities may be realized in variant forms and with different relative weighting, but they are nonetheless, common in their base. Without such a common base, I do not think that coherent communication about visual concerns would be possible between individuals, let alone between varying cultures.” Kemp, M., The science of art: optical themes in western art from Brunelleschi to Seurat, (Yale University Press, New Haven), (1990).
in front of it, whereas the thing represented in a painting or a map is always
‘elsewhere’.”

Stoichita’s last point is an important distinction, that an image in the mirror is not
transportable and requires a presence opposite it to produce an image, whereas other
representational forms may exist in the absence of the referent. This is the great power
of representational technologies and a key to the human species’ success. However,
what Renaissance perspectival depictions achieved was a means of preserving the mirror
image, not as a fleeting reflection, but in a transportable and permanent form. Painting
that emulated the appearance of the mirror image transformed the mirror image from
‘natural sign’ into a painted sign that resembled a natural sign. In so doing, these
‘naturalistic’ images suggest the subject’s presence even when absent, a conflation of
sign and referent that contaminates not just the entire field of ‘realism’ but finds its way
into photography and cinema in the present day. It also conflates the mimesis of the
mirror with representation itself.

Mirrors images are not just representations, they have become a fundamental
explanation and model for signification itself, one that has been adopted as the primary
mode and metaphor for representation since the Renaissance and assumes some direct
correspondent relationship between the sign and its referent. The mirror still has all
modes of Western representation trapped within its tain. Stylized departures from its
limitations are seen as distortions or as just that – styles – as opposed to the neutrality
of the mirror image itself. It is thus a determining influence even when opposed
because it is the norm around which all other visual regimes are centred. We are, indeed,
trapped within the mirror.

The following ‘rays’ investigate the role of the mirror image as metaphor in the
representational systems of the current era.

94 Stoichita, *Self-Aware*, p184
**Representation Rays**

Ray One : Mirror and Virtual Images

Mirror images share some features with other naturally occurring, image producing, phenomena – shadows and projected light. Like mirror images all these images are virtual\(^{95}\) – that is, they are composed only of light alone and lack the dimensions of depth and material substance found in culturally constructed image forms, paintings for example. Shadows are a form of silhouette formed by occluded light. This occlusion is only a partial absence of light, however, a shadow still reflects incidental light, hence the colour evident in shadows.\(^{96}\) Projected light passing through a hole into a darkened space or room produces an inverted image on a surface opposite - a natural phenomena harnessed to produce the eponymous ‘camera obscura’. By this means too, images are formed on the human retina. All these naturally occurring phenomenon have been adapted to create image producing technologies that render the image as permanent and substantial. They may then be subsequently transported and shown in the absence of the thing referred to - like the recorded shadows of cinema and their eventual projection. The virtual is thus made palpable, and the necessity for actual presence is overcome, reconfigured as a representation that conjures up the suggestion of a presence.

Ray Two - The Mirror and the Renaissance

Renaissance perspectival painting is a representational system based on emulating the appearance of images in a planar mirror. It has already been noted that at the time of the Italian Renaissance, metal mirrors of improved clarity become more widespread and vastly superior planar glass mirrors were beginning to be produced. It is no accident then that the Renaissance period also saw the birth of linear perspective that schematized a method to represent such images. Despite the most famous

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\(^{95}\) This is the case for all but one type of mirror - convex mirrors are the exception here. These focus light rays in front of the mirrors’ surface so the image exists above the surface of the mirror. This is termed a “real” image rather than a virtual image.  

metaphorical conception of linear perspective as a ‘window’ - derived from the writings of Leon Battista Alberti and Leonardo Da Vinci. The window analogy might be better understood as a hyperbolic description designed to promote the superiority of perspective over other modes of representation. In actual fact, a closer analogy is the planar mirror - an observation also often alluded to at the time elsewhere and at length by Da Vinci. Unlike a window which merely frames an existing three dimensional space, the mirror creates an illusion of three dimensional space on a planar, two dimensional surface. This is precisely the same operation as linear perspective. The window metaphor is useful to illustrate the mechanisms of perspectival construction, as it is conceptually understood as a flat plane intersected by light rays travelling toward the eye, to produce a cone of vision. The analogy is also calculated to evoke perspective as a direct and realistic depiction – one that is not deferred, that does not reflect real space, but is of the same substance as that depicted. Yet this is precisely what painting does not do. The perspective image is an image, reduced to two dimensions. It is an insubstantial vision, very unlike that seen through a window. The window

For perspective as a window see: Alberti, L. B., *On Painting*, (Yale University Press, New Haven, Connecticut), Della Pittura, 1435-6, Trans. Spencer, J. R., (1966). “I inscribe a quadrangle .. which is considered to be an open window through which I see what I want to paint.” P56 (the attendant footnote indicates the Latin is closer to “which to me is an open window from which the istoria is seen.”p109 footnote 41 of the first section of the book.) and Leonardo Da Vinci from his *Notebooks* “Perspective is nothing else than the seeing of a plane behind a sheet of glass, smooth and quite transparent, on the surface of which all the things approach the point of the eye in pyramids, and these pyramids are intersected on the glass pane.” Cited in Gregory, R. L., *Eye and brain : the psychology of seeing*, (Oxford University Press, Oxford ; New York), (1998). For an account of the mirror as a parallel to perspective see Leonardo Da Vinci's *Notebooks* section 529 Gutenberg cited below.


When you want to see if your picture corresponds throughout with the objects you have drawn from nature, take a mirror and look in that at the reflection of the real things, and compare the reflected image with your picture, and consider whether the subject of the two images duly corresponds in both, particularly studying the mirror. You should take the mirror for your guide--that is to say a flat mirror--because on its surface the objects appear in many respects as in a painting. Thus you see, in a painting done on a flat surface, objects which appear in relief, and in the mirror--also a flat surface--they look the same. The picture has one plane surface and the same with the mirror. The picture is intangible, in so far as that which appears round and prominent cannot be grasped in the hands; and it is the same with the mirror. And since you can see that the mirror, by means of outlines, shadows and lights, makes objects appear in relief, you, who have in your colours far stronger lights and shades than those in the mirror, can certainly, if you compose your picture well, make that also look like a natural scene reflected in a large mirror.

‘All things send their semblance to the eye by means of pyramids. The image of the original object will be smaller to the extent that the pyramid is intersected nearer the eye. Therefore you may cut the pyramid with an intersection that touches the base of the pyramid.” Leonardo Da Vinci *Notebooks*. Cited in Gregory, *Mirrors*, p31
metaphor also suggests an inner consciousness looking out into another, exterior world rather than back at an externalised, projected construction of its own making and thereby suggested a greater ‘realism’. Yet, the more accurate and honest simile was not the window, but the mirror.

Both mirror and window similes are suggestive, but the primary pictorial construction of perspective resides with the mirror. When considered as a mirror the representational aspect of perspective is clear but if understood as a window the representation does not just reflect the real, but actually threatens to usurp it, since it is of substantially the same ‘stuff’ as the world it represents. I will return to this point later.

The perspectival image produced by the planar mirror predates the invention of linear perspective and almost certainly suggested it. By flattening any view before it into a two dimensional plane, while retaining a correspondent resemblance constructed with all the recessive depth of actual space, the planar mirror automates a linear perspectival projection. This is not to claim that the mirror alone was solely responsible for the invention of mathematical perspective at this time, but it was certainly a central influence.

Additionally, Henri Lefebvre notes other formative influences that arose from actual space. By the thirteenth century, due to changes in land ownership tied to the evolving medieval system of feoffment, the landscape surrounding Tuscany was being dramatically reconfigured.

These trees, the criss–crossing of these alleys, sectioned and organized the land. Their arrangement was evocation of the laws of perspective, whose fullest realization was simultaneously appearing in the shape of the urban piazza in its architectural setting. Town and country – and the relationship between them –

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100 All these possibilities are brilliantly and succinctly pictured by Rene Magritte. In particular *The Human Condition*. (Plate III & IV)
had given birth to a space which it would fall to the painters, and first among them in Italy to the Siena school, to identify, formulate and develop. ¹⁰¹

In fact there was a dialectic operating between actual and pictorial space. Just as perspective painting mirrored the emergent arrangement of space surrounding the painter, so too did its pictorial precepts find expression once more in the organization of actual space. Here was the beginning of a particular mode of self-reflexive mirroring – a ‘feedback loop’ - dialectically determining the relationship between pictorial and real space that has increased and accelerated up until today.

And, if perspective governed the arrangement of component elements, of houses and other structures, the inverse was equally true, for these could also be said, by virtue of their alignment and grouping, to give rise to a perspective. ¹⁰²

A dramatic moment reveals this point just before 1413 when Filippo Brunelleschi stood behind his perspectival painting of his proposed architectural modification in the piazza of the Baptistery of St John in Florence. ¹⁰³ A hole was placed at the vanishing point of the painting allowing a viewer to look through the rear of it onto a mirror positioned to reflect the piazza. Among its architecture was thus magically placed the reflected painting of Brunelleschi’s new building – a virtual reality demonstration that is echoed today in architect’s computer generated, three dimensional mock-ups and Photoshop vistas.

Even by the time Leonardo declared the mirror as ‘the rein and rudder of painting’ ¹⁰⁴, the mirror was beginning to saturate the visual and metaphorical thinking of the Renaissance.

By 1500 more than 350 European books had mirror titles of one sort or another. With the invention of printing in the middle of the fifteenth century,

¹⁰¹ Lefebvre, *The production of space*, p78
¹⁰² Ibid. p273
¹⁰³ For a good description with illustrations see Gregory, *Mirrors*, p29 – 30 a more comprehensive account is in: Kemp, *The science of art : optical themes in western art from Brunelleschi to Seurat*, pp344-345
¹⁰⁴ Panofsky, *Perspective as symbolic form*, p66
the number of such titles exploded, particularly between 1550 and 1650. In the *Mutable Glass*, the classic study of mirror titles, author Herbert Grabes calls the mirror ‘the central metaphor of a literary era’, especially in Elizabethan England.\footnote{Pendergrast, *Mirror mirror: a history of the human love affair with reflection*, p 124}

The planar mirror that had became so common and so improved at this time, not only underwrote the construction of linear perspective but permitted an increasing awareness and visibility of the self. Not just of the self as individual but, more broadly, of the human subject as the central pivot of all things, a vision embedded in emergent humanism.

Ray Three - The Mirror, Naturalism, Realism, Representation and the Renaissance

Although the invention of linear perspective is often naively championed as a more ‘realistic’ mode of representation than those preceding it, this is so only if we accept an ever increasing verisimilitude to mirror images as the definition of realism. In truth, realism is a style – one that may have many varied formal qualities but whose underlying definition is a mode of representation that either iconically or indexically refers to its referent via a pictorial resemblance. Realism may be either ‘conceptual’ or ‘perceptual,’ using Edward Lucie-Smith’s workman-like definition.\footnote{Lucie-Smith, E., *American realism*, (Thames and Hudson, London), (1994). p 9-11. This is itself an echo of earlier conceptions such as Poussin’s distinction between ‘aspect’ (simply, or directly looking) and ‘prospect’ (looking attentively and self consciously aware of fabricating a result) see Alpers, S., *The art of describing: Dutch art in the seventeenth century*, (University of Chicago Press, Chicago), (1983).pp48-49} He describes conceptual realism as an observed resemblance modified by a ‘habitual, ritualised, or otherwise predetermined convention of stylistic representation’ as opposed to perceptual realism that attempts to render what the eye actually sees. Of course, this neat schema ignores the fact that there is a dialectic between these two states, but for the moment it is a useful polarity.
It stands as a tribute to the fundamental role the planar mirror plays in the current age that a link between representation and mirror reflections are immediately suggested, yet reflections themselves are not representations but natural phenomenon. Mirror images and representation have been welded together since the Renaissance and have become so close that the link now seems second nature. More venerable representational traditions prior to the Renaissance made no such link. Classical explanations for the birth of painting found in Pliny’s *Natural History* ascribe the shadow rather than the mirror as the basis for the art.\(^{107}\) This is surprising to the modern mind - paintings seem more like mirror images than shadows. This makes perfect sense if we consider the rarity of mirrors before the Renaissance and the fact that earlier painting traditions did not base themselves on a formal reduction to mirror mimesis, but to other stylistic and pictorial demands.\(^{108}\) It is only since the historical triumph of the Renaissance pictorial mode that representation has been strongly linked with the mirror, a connection that is historically specific, not natural. It is also an indication of the hegemonic function of the mirror in contemporary representation that the connection of painting with shadow should cause any surprise at all.

Planar mirror images may be considered literally - as simple, correspondent reflections - or in a more poetic manner suggested by the various mechanisms that produce these images. There are two representational styles that roughly accord with these two ways of considering mirror reflections – naturalism and realism. Naturalism is equated with simple, iconic mirror images; and realism with a poetic or interpretive consideration of mirroring - an indexical rather than an iconic reading. The representational realism that initially follows the Renaissance is however, somewhat between the two – allowing interpretive freedoms but establishing a naturalistic space that mimics the space seen in the planar mirror with particular attention paid to its startling illusion of depth. The illusionary depth of perspective was the shackle that chained painting to naturalism over the ensuing centuries, despite the fact that the ‘naturalism’ of its space was mathematical rather than perceptual.

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The naturalism of perspective was still a cultural construction and as dramatic as its depiction of illusionistic space was, it was still a formulaic style. Its major pictorial breakthrough was in presenting a convincing portrayal of depth and a unified conception of space. Prior to this, artists were either unable to convincingly portray depth, ignored it completely, or were seemingly content to indicate depth through less effective, more subjective means. These devices did however mirror the visual clues used by the visual cortex to signal depth – shading, occlusion, (non mathematical) scaling or atmospheric perspective. Yet this ability to convincingly render depth – a breakthrough in perceptual realism in its own way – did not make perspective a type of perceptual realism. Instead, it formed a new mode of conceptual realism based on a preconception of space as regular, uniform and premised on what would become known as ‘Cartesian’ space. “In a sense, perspective transforms psychophysiological space into mathematical space.” This new mirror ‘style’ thereafter established a lineage of ‘realist’ representation. Derived from the mirror itself this would be repeated through the images of perspective, the camera obscura, academic painting, photography, cinema and now, digital 3D modelling programs. All share the same construction of space as regular, geometric, unified and mathematical. Each presents a two dimensional picture plane capable of suggesting regular, recessive depth, correspondent resemblance and implied presence.

The verisimilitude linear perspective emulates is not commensurate with human vision, but with a particular and limited aspect of its operation that would eventually find its apogee in photography. What perspectival images represent is not what a human sees. What it approximates is the function of the human eye divorced from all the other processes of vision, that is, the processing that occurs in the human brain. In the eye, projected light passes through the pupil to focus on the plane of the retina where an

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109 A regular, unified geometry of space which did away with the medieval distinction between the conditions found below the lunar sphere and those above, also commence their dissolution with the invention of perspective but had to wait until Newton to be finally abolished.

110 For an explanation of these mechanisms in determining depth in the human vision system (and the additional devices of relative motion and stereopsis, denied to the two dimensional artist) see Livingstone, Vision and art : the biology of seeing, Chap 7 pp100 - 107

111 Panofsky, Perspective as symbolic form, p31
image is formed. The eye operates utilizing the same physics as those found in naturally occurring cameras obscura. Indeed, the eye has evolved to mirror these natural conditions. There are major differences between the eye, the camera obscura and perspectival rendering however. The retina is a curved, convex and circular plane rather than a flat, rectangular one. Although the image is uniformly spread over the retina, sharp focus is only possible in a very small area (approximately 1%) - the region of the fovea. The system also assumes a single eye, but human vision is binocular. Rather than staring fixedly, the eye is subject to rapid sciatic movements that oscillate and scan. Nor is the retina a simple plane on which an image is formed and then viewed by the ‘mind’s eye’. The retina is actually a specialized outgrowth of the human brain and the light that falls upon it is instantly translated into electro-chemical impulses and absorbed directly into the brain for processing. There is also a blind spot in the very centre of vision where the optic nerve joins the retina. Nor is light simply received in one area: after being translated into electro-chemical signals that travel along the optic nerve the information is processed in over 37 different areas of the brain at various rates, before being ‘collated’ in a manner still only dimly understood, into a conceptual hypothesis of exterior conditions.\textsuperscript{112}

Despite these and other differences, they have often been ‘overlooked’\textsuperscript{113} and linear perspective was destined to become the default stylistic mode of representation in the West. This regime has become equated not just with realism as a style, but often with ‘reality’ itself. Indeed, this is more the case today than it was in the 15\textsuperscript{th} century. As we make our tools, so do our tools make us. The ubiquity of photography and the popular perception that the ‘camera does not lie’ indicates that for many people the camera, and the perspectival system it mechanically reproduces, is in fact, a more accurate mode of seeing than human vision itself. In fact, this is to reverse the issue. Perspective was intended to achieve a representational form closer to some aspects of


\textsuperscript{113} Panofoisky, \textit{Perspective as symbolic form}, p34 “And indeed, if even today only a very few of us have perceived these curvatures, that too is surely in part due to our habituation – further reinforced by looking at photographs – to linear perspectival construction: a construction that is itself comprehensible only for a quite specific, indeed specifically modern, sense of space, or if you will, sense of the world.”
human vision than previous styles had achieved - not to be the standard mode of vision which the human imperfectly mirrors. Linear perspective is just one mode of representation among many others and in terms of a verisimilitude that emulates the processes of human vision, is less perceptually convincing than a cubist canvas. The historical triumph of perspective as a mode of representation, has blurred these distinctions and the conventions of perspective, now mechanized in photography, are popularly considered a natural mode of vision. The conceptual is thus conflated as the perceptual.

This reification of perspectives makes it appear as a natural mode of organization to the modern Western mind. Since it is also a means by which it is possible to reshape, reorganize and control the materiality of the world itself, this too appears a natural arrangement.

The problem of mimesis then, is not one of aesthetics but one of social power, and the emergence of the Italian theatre and perspective painting are at the start of this ever-increasing capacity to produce equivalences.

The invention of linear perspective and its progeny – the Cartesian grid, the camera obscura among others - are central examples of a range of technological and conceptual innovations that became motivational around this period, not only in pictorial space, but in accurately mapping and arranging real space. This development ameliorated the expansion into, possession, rationalization and colonization of geographic space. So the space of Nature was reformulated and reorganized along new lines of thought structured within an emerging empirical/rational tradition. From the Renaissance on, the Western landscape and those landscapes that came under the control of the West, underwent a process of abstraction from their natural state to be mapped and shaped according to these new principles, transformed to fit these new modes of organization and production. Thus, over the centuries, the sprawling dirt lanes of the Medieval village became the asphalt grids of the modern megalopolis, the un-scaled pictogram maps of the middle ages became the regular projections of Mercator and his kindred.

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114 Crary, J. "Spectacle, Attention, Counter-Memory", October No. 50 (Fall) 1989 (1989), Presented as a paper at the Sixth international Colloquium on 20th century French Studies: "Revolutions 1889-1989", Columbia University, March 30 - April 1, 1989.98
Thus the world increasingly began to mirror the mirror that had been devised to capture it.

Ray Four – Art History and Mirroring the Real

A new order of things as described by Foucault emerges from the Renaissance, where a schism between sign and referent becomes the central problem of epistemological thought. There arose a requirement for representational ‘accuracy’ – a sure and certain link between sign and referent – to compliment and underwrite the rise of a new science based on the twin pillars of reason and empiricism.\(^{115}\) The task for philosophy then, was to suture over the schism between sign and referent to insure some means of accurate correspondence. The compelling metaphor of the mirror provided a ‘tain’, a system of thought, that could create a correspondent relationship between sign and referent akin to that between an object and its mirror reflection. For idealist Western philosophy of this period, this ‘mirror’ was not meant to be subject to the rude stuff of the world but to be realized in the purity of mental reason.

The notion of an unclouded Mirror of Nature is the notion of a mirror which would be indistinguishable from what was mirrored, and thus would not be a mirror at all.\(^{116}\)

For art, the mirror of linear perspective provided something parallel to this idea, in the notion of ‘realism.’ This system of representation provided the illusion of a spatial depth convincing enough to beguile the viewer and make them periodically suspend or forget their recognition of the central illusion – as if they really were looking through a window onto actual space. By imitating the space seen in the planar mirror, linear perspective suggested a naturalism and immediacy – as if the referent were actually present, just as it would be in an actual mirror, rather than constructed in absence.\(^{117}\)

\(^{115}\) Despite these being considered competing doctrines – an echo of the earlier Platonic/Aristotelian split.

\(^{116}\) Rorty, *Philosophy and the mirror of nature*, p376

\(^{117}\) Norman Bryson disputes this generalization of perspective as a superior mode of representing depth to point by pointing to the shallow space of Dutch still life paintings that he claims make for a defining difference between the Northern and Southern traditions. See: Bryson, N., *Looking at the overlooked: four essays on still life painting*, (Harvard University Press, Cambridge, Mass.), (1990).p 71. What makes these Still life images so illusionistic though is a combination of careful mimetic rendering of the object’s surfaces and their convincing
A survey of particular artistic representations that employed perspective following its invention, or that referenced the mirror more overtly, is beyond the scope of this paper. There are countless examples to be found between the Renaissance and the contemporary period. Nor is it possible to list the variations in approach to perspective taken by individual artists and ‘schools’, however, here Svetlana Alpers in her *Art of Describing* importantly points to differences in approach between the Northern and Southern traditions. She points out that the Northern tradition is more mirror-like in passively recording the surfaces before the eye with a photograph-like fidelity, while the Southern tradition was more mathematical, concerned with arranging objects within deep recessive space, and subordinate to the more overt ideological narratives and myth stories it sought to represent – the *istoria*. The northern mode’s depicted “the world prior to us made visible” while the southern assumes that we are “prior to the world and commanding its presence.”

To lessen the contrast made by Alpers, note that even here, these two approaches still operate as mirrors. One passively reflects, the other reflects outwards, that is *projects*. The Northern tradition records with camera-like fidelity the surfaces of the world, while the South constructs a theatrical world of geometric solidity and fills it with narrative myths and religious stories. Yet I would argue that what is projected onto the world in both instances, (but is particularly noticeable in the southern tradition) are the anthropomorphic structures and the space of linear perspective embedded in the mirror. Along with it, the human is made central to both systems.

When looked into, the planar mirror, as the spectacular and specular wonder of its day, yielded back an image of the world centred around the human Self, one constructed in marvellous clarity. Not surprising then that Alpers also remarks:

“Bound to the Albertian view is a privileging of man, for it is in the name of the *istoria*, the representation of significant human actions, that this picture is made.”

volumetric space which is an ordered, recessive space. Space in the two traditions is not actually different. Depth is merely truncated in still lives - shallow relief is substituted for extreme depth - certainly an important difference, but it does not in itself represent a defining schism. What make still life paintings convincing remains the ordered, perspectival spatial depth within which its forms are rendered and arranged.

118 Again see here particularly Miller’s exhibition and catalogue, *On Reflection* op cit.
119 Alpers, *The art of describing: Dutch art in the seventeenth century*, p70
..Alberti, following Protagoras, claims that man, as the best known of all things to man, is the measure. The prior viewer is confirmed again. So many aspects of Renaissance culture, its painting, its literature, is historiography are born of this perception of an active confidence in human powers. And so much are we heir to this view of man, or perhaps more particularly so much are art historians heir to this view of artistic representation, that it is hard to see it as a particular modality and not just the way representational art is.”

Both the Northern and Southern traditions are mirror-like in their own way – the North a literal mirror reflecting the surfaces and views before it (largely through the mirror of the camera obscura) – the southern tradition reflecting back human/perspective projection as ‘natural’ and embedded in the very logic of the picture. Again, these two tendencies might be broadly understood as perceptual and conceptual approaches.

What is important in this instance is the dual role the mirror came to play in the resulting period both as a metaphor underwriting a correspondent epistemological realism and, as a method and mechanism of representation, both capable of transforming pictorial and real space.

In these two senses then, linear perspective increasingly became the default mode of Western representation. While often employed in depicting quite unrealistic or idealized scenes - in the purified forms of Classicism for instance - or the depiction of mythologies both classical and religious – the picture plane in Western art, even when not precisely conforming to the rigours of a Piero della Francesco canvas, was nonetheless structured around a workmanlike assumption of perspectival rules and space. This convention was so ingrained that even painters such as Fuseli or Goya who depicted the extreme visions or fantastic nightmares, did not abandon perspective’s doctrines of ‘realistic’ representation. Demons might become manifest – to sit brooding on the heaving chests of maidens - but they were modelled within the regular recessive space of perspective and obeyed all the demands and rules of realism. (Plate V)

120 Ibid.p43
The pictorial space of Western representation increasingly assumed the mirror-emulating features of perspective. What was intrinsic to this mode of representation was an assumption of ‘accuracy.’ This supposition was to drive further shifts in artistic representation. The realism it proposed was broadened to include a realism in subject matter. A thread in art emerged that sought to depict the true conditions of existence rather than emblematic figures posed within grand meta-narratives. This tendency mirrored a concurrent historical shift ‘downward’ of political and economic power as it gradually moved away from the monarchy, church and nobility, to the bourgeoisie. Eventually, fledgling movements even began to scandalously advocate for a more generalized democracy. Likewise, artistic depiction during the period fell ‘low’ – the Christian God and saints, gave way to depictions of classical figures and gods from antiquity, mortal nobles, wealthy burghers and then to the humble and everyday. This is a trend that has continued through the 20th century to include the art of the abject, the mad, the impoverished, the incompetent and so on. By the 19th century this tendency coalesced into an overt artistic movement - Realism - that, in time, did not flinch from portraying even wretched realities; such as Jean-Francois Millet’s lowly *Gleaners*. Realism’s blunt insistence on verisimilitude was grimly intoned in Gustave Courbet’s challenge - “Show me an angel and I will paint one.” Yet even with their insistence on realism, the space of these painters remains within the dictates of perspectival rendering.

The empirical impulse that would eventually drive art to question its fundamental assumptions was also central to science. In the 19th century a number of experiments in the area of perception, led to a range of results that suggested vision was very ‘unmirror-like’. Likewise a number of optical devices were alternatives to the mirror-like operations of linear perspective and the camera obscura. These included the Faraday Wheel, the Phenakistoscope, the Zellotrope, the Kaleidoscope, the Wheatstone’s stereoscope among them. As Jonathan Crary points out, a number of these included a binocular structure rather than the monocular vision of the dominant

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121 Martin Amis suggests a similar tendency in literature that he directly links with altering cosmological science in the modern period. These have increasing marginalized the central role of the human as science discovered that the universe was not centred on Earth, our sun, or even our galaxy. Our diminishing role in the universe has continued and constitutes what he has termed ‘the history of increasing humiliation.’ Amis, M., *The Information*, (Flamingo, HarperCollins, (1995).p434 -437
paradigm. As important as these instruments were in demonstrating the existence of a new and scientifically rigorous approach to vision, ultimately these devices were accorded the status of curios. The invention of photography and cinema overtook these alternative devices to become the dominant mechanism of imaging and thereby ensured linear perspective continued as the default mode of Western representation.  

Certainly by the early 19th century the assumption of representation as a ‘mirror’ is stylistically pervasive and is most evident in the official style of academic Salon painting. Although highly idealized, this approach to painting assumed that its stylistic dictates reflected an accurate rendering of the real. A contrary approach to Salon painting arose in the self proclaimed style of Realism. Rejecting the depiction of idealised narratives and clichéd homilies, this radical approach wished to depict the world with all its gritty flaws - as it is, rather than what it might be. In this is claimed itself as a ‘mirror on the world’, more accurate than any Salon work. Both approaches still retained the conventions of linear perspective, and thus neither approach was more ‘objective’ than any other. Even at the level of subject matter it is difficult to argue that depictions of the ‘low’ are any more ‘realistic’ than that of the ‘high,’ it is simply a matter of ideological viewpoint.  

A contrary tendency to Realism at the time, was an art that had little to do with the demands of ‘realistic’ subjects but instead stressed its own autonomy – an ‘art for arts sake’. Even here in the work of the Symbolists, the Art Nouveau, the Romantics and others, perspectival space was never fully abandoned. However, this approach did signal an important shift toward a self-referential formalism and ‘flatness’ that would be

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122 Crary, J., *Techniques of the observer : on vision and modernity in the nineteenth century*, (MIT, Cambridge [Mass.]), (1992). It is important to note that Crary posits these devices in contrast to the camera obscura that he considers the key optical device of the day. I would argue that the camera obscura is a subordinate mechanism to the planar mirror. In this case, it is interesting that virtually all the devices Crary lists also contain mirrors as central elements of their mechanical structure.

123 Indeed, there was a strong political assumption at work that was clearly noted (and feared) in its day. In choosing to represent aspects of life hitherto ignored by lofty Art, artists were elevating these themes in a manner uncomfortably like the parallel advocacy of political power for the common people being sought by the fledgling democratic political movements of the day.
very influential in the next century. As avant-garde movements, both Realism and ‘art for art sake’ approaches stood opposed to the ideological platitudes of the Salon and bourgeois society.\textsuperscript{124} Although the self-referential formalist approach was hostile to Realism, it was not from this quarter that Realism’s greatest challenges would arise. The drive to an increasing empirical realism - that assumed art should pursue an ever greater accuracy, an ever greater realism - was eventually responsible for undermining the style of Realism itself. This was because, as noted above, perspectival representation is quite unrealistic in depicting a mathematical, ‘conceptual realism’ rather than the actualities of human vision. An emergent, empirical approach emerged that believed realism should be based in perception – that for an image to be ‘really’ real it should picture what is seen. The logic is not compelling though, because the dialectic of vision entails a conceptual aspect beyond the innocent eye: “It is the spectator, and not life, that art really mirrors.”\textsuperscript{125} Nonetheless a division commenced between a ‘conceptual’ approach and a fledgling perceptual approach to representation. The schism would continue and widen during the Modernist movements of the 20th century, between a formal self-reflexivity and a more broadly defined ‘interpretive’ mode of realism. However, although they may seem opposed, both approaches to representation, draw on the metaphor of the mirror. One sees art as a mirror that reflects (and reflects on) the world, the other sees art as a mirror that self-reflexively reflects itself.

Impressionism is often proclaimed as the first Modernist movement because it seemed to focus on ‘perceptual’ representation.\textsuperscript{126} Its basic approach could be considered a radical reading of the mirror metaphor as an ‘objective’ viewer probing the effects of vision. This empirical inquiry into vision thereby uncovers the essential subjectivity of the viewer in much the same way as later phenomenological investigations for an ‘essence’ ended in an absence filled by the viewer. Yet, even

\textsuperscript{124} A hilarious list defining contemporary, bourgeois platitudes can be found in Gustave Flaubert’s \textit{Dictionary of Received Ideas} reproduced in Flaubert, G., \textit{Bouvard and Pecuchet}, (Penguin Books, London), 1881, Trans. Krailsheimer, A., (1986).
\textsuperscript{125} Wilde, O., \textit{The picture of Dorian Gray}, (Penguin, London), (2000). Wilde’s preface p2
though Impressionism confronted and challenged the assumptions of academic Salon painting, it did not fundamentally discard the idealized mathematical construction of space assumed by perspective. Beneath its dashes and jabs of colour, there remains the geometry of mathematical perspectival space. Although Impressionism begins to dissolve the solidity of these objects in effervescent surface effects, it is not until the movements that follow it that the dominance of perspectival space is shattered. Along with perspective the mirror itself is shattered but the mirror metaphor remains. The unified, planar mirror may no longer be the paradigm but the planar mirror as a fragmented, multiplicity reflecting heterogeneously rather than homogenously, survives.

Part and parcel of all this was the 19th century invention of photography. At the time Paul Delarouche made the famous remark: “From this day on, painting is dead.” It was a claim that now seems greatly exaggerated and is the subject of knowing chuckles and slow shakes of the head - but I believe he was right. Painting as it was then configured as a perspectival representation of the ‘real’ world did die at the birth of photography. Not immediately perhaps, that sort of painting still lingers, but no one pays it much mind – an inconvenient aged relative put out to pasture in some forgotten old people’s home – it is no longer Art. Photography not only took over what had been a mainstay practice of painting since the Renaissance, it adopted the mirror-based mechanisms of linear perspective and mechanized them. Painting itself still lives on, triumphant at times, but it is not an art of the simple planar mirror – unless it is served with loads of irony. (See: Plate VI Mark Tansey)

Largely as a result of photography, representational realism became the dominant pictorial style of the 20th century. Abstract art may well be its most innovative moment of Art, but except for a few brief periods – most conspicuously during early Modernism in Constructivism and Suprematism, and after the Second World War with Abstract Expressionism and Tachisme – the dominant mode of artistic expression has been, broadly realist and representational. In the case of abstract expressionism, it could

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even be argued that these canvases represent the internal emotional states of the artist or the general zeitgeist of the day and are therefore mirrors of those states, expressed as phenomenologically reduced essences of feeling. A mode of representation, moreover, that automatically assumes itself to be capable of finding a mirrored resonance in the breast of the sensitive viewer. As for modes of representation outside of Art, the stylistic triumph of realism in the 20th century is not even in question.128

Ray Five: The Mirror and Modernist Art

The early period of modernism roughly from 1888 – 1918 was an extraordinary moment in the history of Western culture. Not only did dozens of new art movements and styles spring into existence in the space of a few short years, there were also revolutionary leaps in Art, technology, the humanities and the sciences. Physics in particular radically altered with the formation of quantum mechanics, Heisenberg’s uncertainty principle and Einstein’s theory of relativity – all stressing subjective effects at the heart of hard fact.129 Fundamental to our purposes though, is modernism’s assault on the planar mirror of perspectival space, and Modernity’s attack on positivist epistemology; both assaults that were to shatter the planar ideal of the mirror into a fragmentary arrangement that persists today.

Modernist art is a problematic term. Given the variety of styles, movements and artists that it contains, any monolithic formulation of the period is dubious, yet such an assumption is frequently made. In broad terms some coherence is discernable. There is a notion of modernist art as essentially avant-garde figure – a heroic individual creating works of unparalleled originality - but this has its problems and the faintest examination

128 This point is nicely made by Staniszewski. She argues that although 20th century abstraction sought to find a universal language of modernity in its abstract forms, the true, universal language of modernity is - and here you turn the page to be confronted with a screen grab from a television series – the realist representational mode of popular culture, mass media and photography. Staniszewski, Believing is seeing : creating the culture of art, p194
129 See Kern, S., The culture of time and space 1880-1918, (Harvard University Press, Cambridge, Mass.), (1983). For an overview and discussion of these along with the astounding list of technologies invented at this time.
reveals its inaccuracies.\textsuperscript{130} This conception is also scarcely a definition capable of addressing the diverse styles of the period. In general terms though, some sense may be made of this variety of styles if they are considered epistemologically.

The multitude of artistic styles that emerged during the period of early modernism, stressed the role of the subjective and relative over any unified mode of vision and representation. There was an implicit rejection of the unified space embodied in perspective. In broad terms - the vanishing point of perspective was abandoned, substituted, for the viewpoint of the artist. It was as if perspective was replaced by many perspectives. Indeed, this multiplicity was a possibility always implicit in the dynamics of perspectival construction – the possibility of alternative viewpoints. Indeed, arranged as a multiple, sequenced series of viewpoints, one following the other, the logic and mechanisms of linear perspective lead directly to the invention of the cinema – also invented at this time. In painting, the mathematical, unified, homogenous space and geometry of perspective was replaced by relativistic, heterogenous, subjective, notions of space and vision. This moment was truly extraordinary but is sometimes portrayed as a radical, revolutionary break with all that went before it. In one sense it was, of course, but in another, especially with regard to the mirror metaphor, it actually signals a reconfiguration of the metaphor rather than a break.

Three distinct epistemological projects might be discerned from within Modernist art occurring throughout the 20\textsuperscript{th} century. The work of individual artists may fall within the realm of one or even all of them but they remain clear tendencies. The first is a formalist investigation. Heir to the ‘art for art’s sake’ traditions of the 19th century, here artists self reflexively investigated the materiality of their production, or

\textsuperscript{130} The notion of originality is dubious and plainly inaccurate. The emblematic Modernist figure of Pablo Picasso, during the phase of his most important original work, did so in close collaboration with another artist George Braque who remarked that they were “…roped together like mountaineers…”(cited in Hughes, R., \textit{The shock of the new: art and the century of change}, (British Broadcasting Corporation, London), 1980, (1991). p24) Picasso’s later works too, far from being original, were stylized versions of paintings from the pantheon of the old masters. For a more general discussion of the avant-garde and modernism see: Burger, P., \textit{Theory of the avant-garde}, Theory and history of literature; v. 4., (University of Minnesota Press, Minneapolis), Translation of: Theorie der Avantgarde., Trans. Shaw, M., (1984).
set formal structures to work within. The second approach focused on examining and challenging the ‘frame’ of art itself, the key figure here being Marcel Duchamp. Thirdly, and perhaps most broadly, is a sort of ‘interpretative realism’. That is, an attempt to represent the ‘real’ on the assumption that there exists a ‘really’ real evident under mere appearance that is able to be revealed by a critical hermeneutic. “There is an inherent truth which must be disengaged from the outward appearance of the object to be reproduced. Exactitude is not truth.” The resulting representations rarely employed the planar mimesis of the mirror, but interpretive and subjective ‘styles’. It was work, that assumed the Cartesian rupture between sign and referent might still find a correspondence, not through iconic representation (capable of only registering surface truth), but via indexical representation.

The resulting subjectivity of these works often made them incomprehensible to the public and aficionado alike without a careful study of the artists’ explanations. The work proudly bore this uncertainty as proclaiming its avant-garde subjectivity self-evident in its denial of conventional relations of signification - even if the result was increasing obscurity and divorce from the sympathy of the general public. This state of affairs persists and for some art enthusiasts is a cherished aspect of art – its difficulty and obscurity make for an ‘elite’ audience. More broadly this points to what is still the central problem of artists and for our age. If there is no strict, automatic link between our sign system and its referents, how and in what form can our sign systems be linked to the world and all that is in it without falling into a hermetic subjectivity?

Note that the first two approaches outlined above, are broadly self-reflexive, examining aspects of art itself, while the third turns the mirror outward to represent and

131 The ‘truth to materials’ approach of much modernist architecture following Bauhaus is an example. Among others this also includes De Stijl, Constructivism and even the later abstract colour field painters and the influential ideas of the critic Clement Greenberg. To some extent, of course, all artists are concerned with the formal expression of their materials but this approach made these formal concerns their central focus.

132 This approach self reflexively examined not just the gallery but the social structures, language and assumptions within which art is produced and expressed. In short the discourse of art. In many ways this is the closest work to much that is often typified as postmodern.

reflect on subjects beyond art. Virtually any modernist work can be placed within these three epistemological approaches, some within two or three of them simultaneously. Yet despite their fundamental variations, all their epistemological foundations are firmly based within the metaphor of the mirror either as self-reflections or as a reflections on the world. It should be noted that Modernism as a whole was extremely self-reflexive—despite this often being claimed as a defining aspect of post modernism. This self referencing saturated the Modernist consciousness and can seen not only in Cubist references to other media, James Joyce’s parodies of other styles, and even in the popular culture of the period such as Warner Brother’s cartoons,134 Buster Keaton films135 and the ‘Road’ series of movies with their Brechtian asides to the audience, along with countless other examples.

Although the varied stylistics demonstrated by early modernism might seem at first an abandonment of Realism, it was in fact, a deepening of the project of realistic representation. Once again one implicit, I would argue, in the more general epistemological project of empiricism. This project led to an ever more vigorous investigation of how vision and representation operates and in this, Modernism merely makes explicit the subjectivity held implicit in the Renaissance/Enlightenment/Humanist paradigms. Art still held a mirror to the world, but the prism of the eye and mind was factored more directly into the equation. Art fractured into a number of smaller mirrors, each with their own particular view of reality. Thus, for an Expressionist, visions of the world are reflected through a mirror of emotion. For Futurists, the key to the real is its ceaseless dynamism. For a Cubist (perhaps the most radical and formative of all the modernist movements) a collage of juxtaposed elements penetratively depicted the way human vision and consciousness operates—one that incorporated the processes of the brain, including its habitation of time, in perception. For a Surrealist (perhaps the other most important modernist movement) the real lay in the unconscious and its disruptive disconnection of normative signifier/signified relations. And so on, with each modernist movement demonstrating with its particular

134 See particularly Jones, C. M., _Duck Amuck_, Selzer, E., USA, 7min, (1953). Here Bugs Bunny is the animator of a cartoon featuring Daffy Duck who is tortured by his subversion of normal filmic devices.
135 Keaton, B., _Sherlock, Jr._, USA, Silent b&w, 44min, (1924). In a dream Keaton the projectionist, leaves his booth and enters into the film to solve the mystery presented.
style an epistemological approach that proclaimed itself as ‘accurately’ portraying the true (and often hidden) nature of the real. The strident proclamations of certainty that surround many of these movements, as recorded in the manifestoes of the day, along with their denouncements of other groups, indicate the seriousness of their beliefs. Each claimed their own subjective vision was, in actuality, a piercing hermeneutic that had uncovered the true nature of the world with mirror-like accuracy and relevance.

Ray Six: The Mirror, Postmodernism and Beyond

To speak in metaphors - if Modernism saw the Renaissance/Enlightenment tradition of epistemology as a simple planar mirror smashed, and if the various Modernist movements might be thought of as artists picking up individual fragments of the shattered paradigm to declare their particular piece as the singular and unique Truth, then post-modernism is the moment when artists attempted to acknowledge the multiplicity of these fragments as part of a new paradigm – a mirror of fragmentary heterogeneity, each reflecting its own particular viewpoint, but crucially - with no one aspect privileged above the rest.

This is to leap ahead however, since what typifies postmodernism still remains disputed. There was a clearly perceived and substantial stylistic break from modernism that was seen to occur by the late 1970’s. In this manner, postmodernism might be considered a periodizing term, in much the same way as Jurgen Habermas described the way the word ‘modern’ has been used since ancient times as a means for societies to distance themselves from antiquity. Post modernism was more than that however, although exactly what it is (was) is less certain. A full discussion of possibilities is beyond the scope of this dissertation but various candidates emerged. They ranged from considering postmodernism as a style – one that incorporated a kind of free market, free-for-all, eclectic, quotation fest – and was championed by commentators

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such as architect Charles Jencks\footnote{See especially Jencks, C., \textit{What is post-modernism?}, (Academy Editions ; St. Martin's Press, London/New York), (1986).} as liberating and democratic - and pillared for the same reasons by others like Fredrick Jameson, as mere pastiche.\footnote{Jameson, F., “Postmodernism and Consumer Culture” in Foster (Ed.) \textit{The Anti-aesthetic : essays on postmodern culture}, p113} Hal Foster and the writers around the \textit{October} journal tended to see it as informed by post-structuralist theory.\footnote{See his article “Re:Post” in Wallis, B. (Ed.) \textit{Art after modernism : rethinking representation}, (New Museum of Contemporary Art ; D.R. Godine, New York/Boston), (1984).} Still others saw it as an opportunity to revive lame styles and grand traditions from the past, Classicism was a favourite, as was Neo-Expressionism.\footnote{Hal Foster’s consideration of the neo-expressionist was particularly insightful see: “The Expressionist Fallacy”, Foster, H., \textit{Recodings : art, spectacle, cultural politics}, (Bay Press, Port Townsend, Wash.), (1985).pp59-73} Apart from this neo-conservative approach, post-modernism was a liberating break with the formalist strictures of Late Modernism – the mirror fragment that had come to dominate all others. It opened up many art practices to a hybrid approach marginalized during late modernism and allowed an experimentation with materials that recalled the playful innovations of the Dadaists and Surrealists. Postmodernists thinking also posed a serious threat to entrenched academic disciplines and questioned the fundamental assumptions of insular and elite mediums and institutions. Key phrases tended to resound – hybridity, heterogeneity, pluralism, the mediated, the indeterminate, the ruptured, the fragmentary and of course, appropriation and quotation.\footnote{A useful, and often used, didactic device at the time was Ihab Hassan’s list of distinguishing features between modernism and postmodernism found in: Hassan, I., \textit{The postmodern turn : essays in postmodern theory and culture}, (Ohio State University Press, [Columbus]), (1987).p91} These last were a particular focus of many commentators at the time (and since), as the postmodernist trope par excellence, and to some extent this is true, however it was also a trope of modernism and before. Artists have always borrowed from other artists and sometimes this was overt – take Manet’s \textit{Olympia} with its quotation of Titian’s \textit{Venus d’Urbino} for instance. (Plates VII & VIII) Postmodernism is distinct from this in the degree to which this was taken. Postmodernist artists often (shrilly, carpingly, didactically) signalled these borrowings. For many, the non-original quotation and adoption of preexisting structures was the \textit{point} of the work. Not only did they stress the quotation marks, they lit them up in neon.\footnote{One of the most interesting Australian artists of the period, Juan Davilla, actually included footnoted bibliographies listing his stylistic borrowings as part of his paintings. (See Plate IX)}
Running throughout much of postmodernism, and in the devices of appropriation and quotation themselves, was a highly self-reflexive streak that often directly played with the metaphor of the mirror. The morbid use of irony in the period is a case in point. Irony reproduces the subject it wishes to belie in a mimetic, but distanced form. A hollowed-out reflection, its insincere affirmations seemed the perfect tactic to employ in a period where the clutch of tradition and preexisting signifying structures were seen to have ended the possibility of originality. Frequently postmodern artists embraced the notion of mirroring to make speculative plays around its operations and significance. Envisioning a world constructed within a mirror—or at least trapped within discourse that saw language as a prior determining structure that mediated all experience (as ‘reflections’ if you will)—some postmodernist artists took this as the metaphoric basis of their work. Others literally employed the mirror as an object in their paintings and installations.  

During this period photography became an increasingly important medium. Many artists began to play with what now appeared to be a rather slippery indexicality. Its marginal status as an art medium, especially in relation to painting made it particularly appealing to a number of important women artists whose own positions were likewise marginalized in modern art’s structures. In addition, many artists explored photography’s contribution to oppressive ideology through its pivotal role in the mass media.  

In many ways, the postmodern period signalled a return to addressing the ‘real’ after the abstraction of late modernism. It was also a revisitation of many of the issues and ideas concerning realism that were present in Pop art although presented in a more didactic and dour manner. Although it looked to the ‘real’ in this way, the postmodern  


144 Cindy Sherman was a central figure here with her depictions of Self as (many)Other(s). Constructed within pre-defined media mise en scenes, they suggested among other things, a period where the Self had become the mirror of the media. Other important figures included Barbara Kruger, Sherrie Levine, Nan Goldin but the list could go on for many pages.
mirror was not static, or planar, or even simply fragmented. It was a complexly theorized affair that was also highly self reflexive, concerned to signal its mechanisms of signification and reflection. This often became quite dizzying as the link between the mirror image and what it reflected was in constant doubt, constant change.

In hyper-modernism, the signifier is not only left open to the signified, but it is left free to attach itself to an endless sequence of signifieds. But this hypermodern situation describes a hermeticism more complete than even modernism. NO meaning is final, and the signifieds are arrayed one after another, in endless, circular procession.\textsuperscript{145}

Halley’s quote usefully evokes the vertigo that attended the Anglo-Saxon mind as it tried to digest hyperbolic French theory of the time, but it ignores Derrida’s restraint on such a completely open ended signification in his formulation of a ‘condition of possibilities’.\textsuperscript{146} That is, not all interpretations are equally as valid or compelling since the linguistic system itself limits the possible interpretations that might be made around any given sign. Precisely what the relationship and mechanism of signification of sign to referent was during the period was hotly debated and a focus for much artistic work.

Attendant to the postmodernist shift was not just the recognition that epistemological systems are subject to mediation and deferral, but that this was a state to be found in the experiences of everyday life.

In societies where modern conditions of production prevail, all of life presents itself as an immense accumulation of spectacles. Everything that was directly lived has moved away into a representation.\textsuperscript{147}

The increasing abstraction of contemporary experience into the realm of preexisting models, language and other representational devices – within the mirrors of our mind if you like – was most evocatively described at the time by Jean Baudrillard. In particular in his (then recently translated) seminal essay, “Simulacra and Simulation.”\textsuperscript{148} It is this stream of postmodernist thought that has found its way most tellingly into the contemporary period while the more didactic, footnoted appropriations of another postmodernism have dropped away.

Ray Seven: Post-Post Modernism and Mirror’s End?

By the late 1990s then there has been a substantial shift from many of the assumptions of Postmodernity. It appeared the era of Postmodernity was set to wrought revolutionary changes in the social sphere and that the planar mirror metaphor underpinning art and epistemology was on the verge of being abandoned. Although theorists were broadly divided between those like Jurgen Habermas who suggested Modernity was an incomplete project and those like Francois Lyotard who claimed we had come to the end of meta-narratives\textsuperscript{149}, there was an impeding sense of crisis and change in both their arguments. At the same time the epistemological assumptions of the mirror were being challenged by a range of theorists, such as Derrida, or being complicated to the point of dissolution by figures such as Baudrillard. It was a period in which the notion of epistemological multiplicity implicit in Modernism and embraced by postmodernism was shifting toward a new conception based in \textit{ontological} rather than epistemological difference. The universalized subject of Humanism was poignantly questioned and declared spurious. Rather than various epistemological viewpoints arising from varied perspectives, the new episteme considered the possibility of differing ontological states. That is, the human subject was not a single (Humanist) being, but many ways of \textit{Being}. Rather than simply having different viewpoints on the world, the ‘ontological shift’ assumes that the human subject, has many fundamentally different modes of Being in the world. Thus a tribal Australian Aboriginal and a white


urban dweller are not simply seeing things differently, they are constituted in different modes of Being. Of course, this typification runs the danger (that humanism was not immune from) of a return to a depiction of the Other as less than human. 150

In the early 1990s, writers such as Geoffrey Batchen and William J Mitchell had been pointing to a period of ‘post-photography’ where the apparent mirror-like indexicality of the photograph was under question, both on an epistemological level, and from the blows dealt to it by a new technology of representation – digital imaging. 151 So too were a great number of artists producing works that problematized this notion of photography. 152 The innocent notion of the camera as a simple mirror on the world was no longer credible.

Metaphors derived from the planar mirror thus seemed to be at a point of dissolution - epistemologically irrelevant and culturally superseded, but then – what happened? As noted above, there has been a rise of epistemological fundamentalism in many realms of culture. It is not the case that the theoretical and practical changes of postmodernism and Postmodernity have vanished altogether, but neither have they triumphed, and in art particularly, representation has returned with a vengeance. A vast number of younger artists are working unselfconsciously in styles adopted wholesale from the past often unaware that their borrowings are anything less than ‘original’. Perhaps it is scarcely surprising in an era so surrounded by images that we are liable to unconsciously pick them up like viruses. Likewise the modernist assumption of a transgressive avant-garde seems to have returned, with no recognition or recollection of the long debates that questioned this dubious figure. The ‘shock’ and sensation of the so-called YBAs 153 is a case in point. Although presented as avant-garde ‘outsiders’ they

150 “All intellectual traditions, including ours, have been faced with this difficulty. The population groups studied by anthropologists grant the dignity of a truly human condition only to their own members and place outsiders on an animal level.” Lévi-Strauss, *The view from afar*, p25
152 Andreas Gursky, James Casabere, Sherrie Levine, just to name a few.
153 (Young British Artists)
were quickly established as the ultimate art world ‘insiders’ - precisely the critique directed at the concept of the modernist avant-garde figure.

Since the rise of postmodernism and the nascent period of Postmodernity in the early eighties that nurtured and strengthened it, there has been great changes. The early 1980s, though it is often forgotten now, was saturated with a feeling of apocalyptic doom. The arms race had reached a seemingly terminal state and enmity between West and East was at a pitch. Theoretical proclamations of the ‘end of history’ seemed set to be realized in a more than theoretical manner. Since then, a great number of changes have undermined the presumption of a heterogeneous age. Threat of nuclear annihilation seems to have abated, Communism has collapsed, and capitalism is the dominant, and rapidly expanding, homogenous influence on world societies and economies. Conservative politics has become ever more entrenched and once liberal, social-democratic and socialist parties are being dragged (all too happily it seems) to the right. It seems then that a singular dominant ideology is once more forming and with it a reinvigorated assumption of the planar mirror metaphor.

The current era is also rapidly turning to one of homogeny partially because the outlets of expression – the media (the dominant public mirror of the social) – are increasingly concentrated into large corporations. These have been increasingly the subject of amalgamation and concentrated ownership during the 1990s so that now massive corporations such as the Disney Corporation or News Limited have a near monopolies in some areas of publishing and broadcast.\(^{154}\) It is not in the interests of large corporations with vested interests in a variety of consumer products to promote anything other than their own products. These mirrors thus turn inwards to reflect on themselves. There may well be, indeed, there \(\tilde{a}\), heterogeneity and diversity out there, a range of dissident, postmodern thinkers but they now have little or no outlet for their voices in the mass media.

An alternative metaphor emerges to describe the epistemological state of Western culture and art in the figure of the mirror-ball. Rather than the planar mirror it is a spherical, variably reflecting construction. Neatly, it is an instrument associated with excess, pleasure, spectacular effects, as well as a device of reflection constructed in fragmented, uncertain unity. It is, moreover, a device that actively projects rather than simply reflects - but more of that later.

Ray Eight - The Mirror of the Modelists

There is currently a very large number of artists using the model as the basis of their art. These are usually sculptural models but also includes a few artists employing 3 dimensional digital models.\textsuperscript{155} I have termed them ‘Modelists’. Much could be said about this work relevant to the mirror metaphor. For instance, the work often employs an extreme naturalism of surface employed by many of these sculptors which seems to be a direct echo of earlier sculptural approaches,\textsuperscript{156} but of interest here is the use of the model itself. These are not artistic models associated with bohemian garrets, or the cat walk variety, (although there is a certain associated sexiness to the work that influenced the naming of this group), the models here are like the models of architects or replica-kit enthusiasts.

Models are a form of mirroring and have two aspects – they can be constructed to replicate an existing form (as in model aircraft kits) or as a maquette for a pending construction (as in a 3D model by an architect). A model may thus be a reflection, or a projection to be reflected as an actual object. In the first example, when a model copies an existing industrial form - such as an F1-11 fighter jet - the effect is not to mirror the actual machine but rather, to return the object to something closer to its original state as a prototype maquette. In industrial manufacture, all products exist as non-functioning

\textsuperscript{155} A complete list would be too long but a few includes artists such as Ricky Swallow, Patricia Piccinini, Callum Morton, David Haines, Nick Managan, Thomas Demand, Ron Muick, James Caseberre, Michael Landy, and to some extent, myself.

\textsuperscript{156} The work of Duane Hanson and John De Andrea is particularly close here.
prototypes which are then scaled up to full size. These models are copied by casting or machining to become the final components in the end product. In this way, the finished product is an echo that reflects the original prototype. Industrial production reifies something akin to the Platonic conception of ontology – the things of this world are mere replicas of preexisting Ideals that the real only (inexactly) mirrors.

The work of the modelists is thus strangely positioned. They resemble a copy of something - but unlike the model aircraft kit - that something is not guaranteed to exist. If it is indeed a model of a preexisting form, then it oddly seems less a copy of the actual thing than a copy of the prototype on which the form is based. The Modelist’s work is additionally stripped of any functionality. Neither copy, nor original, these works are similar to, but different from, both the final product and the prototype model of their production (if more closely resembling the latter.) A curious form, they are an example of simulation or simulacra. Deleuze in explaining the simulacra recounts the catechism – Man was made in God’s image and resemblance – after the fall

… man lost the resemblance while maintaining the image. We have become simulacra. We have forsaken moral existence in order to enter into aesthetic existence. This remark about the catechism has the advantage of emphasizing the demonic character of the simulacrum. Without doubt, it still produces an effect of resemblance; but this is an effect of the whole, completely external and produced by totally different means than those at work within the model. The simulacrum is built upon a disparity or upon a difference. It internalizes a dissimilarity. This is why we can no longer define it in relation to a model imposed on the copies, a model of the Same from which the copies’ resemblance derives. If the simulacrum still has a model, it is another model, a model of the Other (l’Autre) from which there flows an internalized dissemblance.\footnote{Deleuze, \textit{The logic of sense}, p257-8}

From this it should be apparent that the work of these artists, despite its apparent ‘realism’ are actually undermining a notion of the ‘real’ as is generally accepted. On the other hand however, we have entered an era where simulation is increasingly the norm. As Guy Debord noted above as far back as 1967 – “Everything that was directly
lived has moved away into a representation.”158 – a situation that has spiralled even further away since.

Rather than being phantasmogoric then, these works represent a new realism based in simulation. They are more broadly ‘realistic’ because, increasingly, the model precedes the territory. In this they are akin to, and the inheritors of, Pop Art. After the period of abstraction that followed the Second World War, the Pop artists were among the first to turn back and look once more at the real - only to find it had fled into the realm of representation, into the world of media - as Debord had similarly observed. This condition has continued and intensified. Mediated, abstracted representations now exist on precisely the same plane as the real. Images from TV and movies inform our knowledge as much as any other thing experienced in everyday existence - perhaps even more so given their heightened drama, better colour and sharper editing. It is this collapse of the real and the represented onto the same plane that is partially reflected in these works.

When such works are realized in 3D modelling programs the effect spirals to even greater levels. Since the world is increasingly designed by these 3D programs, artistic representations in the same medium may simulate the simulations that are now the basis for designing real space. More – when produced as Lightjet prints, that simulate the appearance of that old mirror, the photograph – they suggest an iconic link to a referent that chimerically, does not exist. Or rather, it exists, but the photograph bears no resemblance to its original form, despite bearing an uncanny naturalism. These photographs of virtual space are nothing more than the “effect of resemblance”. Perversely, perhaps, they structurally reflect and resemble the conditions of this time more accurately than a conventional photograph could. They are an emergent form of realism that depicts the simulated existence endemic to contemporary reality.

158 Debord, The Society of the Spectacle, 1:p1
Ray Nine - Mirroring, the Linguistic sign, Derrida and the Image

“What I want to know is what’s the difference between a sign and a symbol?” 159

As noted, since Descartes the gulf between signs and their referents has been problematized and thus too the whole area of representation. A key breakthrough in at least systematizing this uncertainty was the birth of semiotics – with Ferdinand Saussure on one side of the Atlantic and Charles Pierce on the other. Saussure’s work formed the basis for a range of French thinkers who were very influential from the early 1970s on. Focusing on the arbitrary construction of the linguistic sign as proposed by Saussure, these post-structuralist thinkers, particularly Derrida, have done much to radicalise the notion of representation and move it away from a simple notion of mirroring. Although primarily concerned with issues surrounding philosophy and writing, Derrida’s ideas have found a broad influence in the interpretation of art. A key additional influence was Roland Barthes and particularly his seminal essay ‘The Death of the Author’160 that similarly suggests a fundamental openness in the interpretation of art, one that places more emphasis of the role of the ‘reader’ than a hermeneutic investigation that attempts to recover the intention of the artist. Both approaches found sympathy following on from similar tendencies in minimalist art whose non-representational forms likewise opened the field of interpretation and placed the responsibility for creating significance onto the viewer rather than the artist. Derrida and Barthes produce sophisticated and entirely compelling arguments with great scope for liberating the disciplines that surround the appreciation of art. There is however what might be called a ‘vulgar deconstructionist’ tendency, that especially emerged in art criticism around the post-modern period of the early eighties that suggested the possibilities of interpretation were virtually boundless (a position Derrida himself flatly rejected).161 Further, many of these ideas, so relevant to writing were, in my view, largely misapplied when directed to representational art. There are substantial differences between the modes of

161 Derrida speaks of a limiting ‘condition of possibility’ that circumscribes a limitless field of interpretation – See ‘Différance’ in Derrida, *Margins of philosophy*, p40ff
representation found in writing and in representational imagery that were often ignored when the viewing of an art work was recast as ‘reading’ an art work.

In his *Course in general Linguistics* Ferdinand de Saussure proposed the nature of the linguistic sign was dual, comprised of signifier and signified. In this relationship, “The bond between the signifier and the signified is arbitrary.”\(^{162}\) Saussure’s formulation was confined to language and the operation of the word sound/image in the processes of representation and communication. The arbitrary nature of the link seemed eminently logical given the nature of the written and spoken word, but something irksome remained. The Murakami quote throws this into relief.

Saussure names this dual entity the linguistic *sign* despite his own unease with the term.

As regards *sign*, if I am satisfied with it, this is simply because I do not know of any word to replace it, the ordinary language suggesting no other.\(^ {163}\)

Yet there is another word, a more accurate one that might have been used – symbol. The word, written or spoken is, as Saussure suggests, essentially arbitrary in its nature. This is because it is a symbol. The fundamental difference between signs and symbols is precisely this – *a symbol’s relationship to that which it represents is arbitrary, the sign’s is not.*

Both signs and symbols are representational devises used to ‘stand in’ for an absent thing – be it concept or object. A symbol is an entirely arbitrary construction bearing no resemblance in form to what it refers to. Symbols are specific to a given culture and time. The connection between it, and what it refers to, must be learnt and is therefore constituted in convention. Thus the word sound/image ‘tree’ bears no physical or aural resemblance to that object or the concept to which it refers.

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\(^{163}\) Ibid. p67
Signs however, always have some resemblance to that which they refer. Indexical signs indicate the additional presence of a supplementary thing and their form is partially determined by this relationship. Smoke is a sign of fire. A running nose is a sign of a cold. Dark clouds a sign of a storm. Or they may be iconic, that is, broadly mimetic even if stylized. Thus a drawing of a horse will resemble a horse in a way that the arbitrary linguistic symbol cannot. In mimesis there is a natural link at work, mediated as is through culture, it remains one where correspondence is determined by resemblance rather than arbitrary connection. Of course, the significance of indexical signs must also be learnt, or uncovered. They are also subject to broader cultural interpretations and meanings, and they may also be misinterpreted since they are indicators rather than the thing itself. It is possible to have a running nose without being afflicted by a cold, to see dark clouds that do not result in a storm. As signs – they are indicators of a symptom or condition which are not yet fully present. Indeed, rather than an absence, an indexical sign refers to that which is present but not immediately evident. This because it either lies at a deeper structural level (the flu virus that causes the running nose), it lies in the future (the curve in the road or the storm as it approaches), or is otherwise deferred but latent. In writing however, the arbitrary nature of linguistic ‘sign’ ensures an unbridgeable gulf between the arbitrary form and what it refers to.

Saussure should have used the term - *linguistic symbol* - rather than the linguistic sign.

Yet if we substitute linguistic symbol for linguistic sign, little in Saussure’s theory changes, although the arbitrary nature he argues for becomes much clearer - so why bother? Although Saussure’s ideas relate only to the linguistics and text based language systems, by confusing sign and symbol, the arbitrary nature inherent in symbols has subsequently tended to bleed into another language system – the arena of image production.
As noted, some of this seepage emerges from the misapprehension of some ideas of post structuralism – Derrida’s in particular. This is not due to Derrida himself. His work sets out to undermine the authority of the text and to challenge the notion of an unmediated presence that seems to be assumed in writing (in philosophy at least). Derrida focuses his interests on writing as the actual expression of philosophy rather than speech. Take note though, that although it is rarely expressed (outside of Derrida’s own writing), that writing is a form of image making. In the Western tradition, it is a form of image making which results in symbols rather than signs. In his formulation of Différance, dissemination and slippage, the linguistic image is subject to multiple interpretations and a rupture between the subject and its representation. Indeed if we consider the text as a form of symbol making rather than indexical or iconic sign production (that assumes some intrinsic link between image and referent) the conditions that Derrida argues for become more self evident. Although Derrida largely confined his remarks to philosophy, ironically through a form of dissemination or slippage, these ideas have also been levelled more broadly to include artistic image making.

Artists of ability know that even representational images may be variously interpreted, subject to multitudinous readings, embody hidden binaries and so on. Derrida’s insights regarding dissemination in this case are hardly something new to the area. In attacking a naïve assumption that an mimetic image of something is simply linked to that thing, his discussions are welcome. However, representational images – iconic signs – are not of the order of writing and Derridean analysis (not necessarily Derrida’s) can be overemphasised. Representational images are not symbols. A picture of a horse refers to a horse in a way that the arbitrary symbol sound/image “horse” does not. Unlike words in Saussure’s schema, there are positive terms in the visual image system – even if they are not absolute. Furthermore, although subject to some notion of Différance, a mimetic, representational image is not fully defined in its difference to other images – it is defined in its actual resemblance to the thing it represents. Indeed, if this link were not clear then they would not be so ubiquitous nor could images be recognizable through the ages, across cultures.

164 Derrida acknowledges the construction of writing as image explicitly with his formulation of ‘Différance’ with its silent ‘a’ that must be seen to distinguish it from its usual spelling. See ‘Différance’ in Derrida, Margins of philosophy, p40ff
Derrida argues that mimetic images are similarly constructed to the linguistic sign - since there is a clear difference between the image and the object, they are not simple, equivalent repetitions. Further, “there is no self-contained, entirely unified original referent prior to the speculative process which could be seamlessly reproduced.” Still there remains a resemblance in mimetic images that is not there in writing. Much of Derrida’s deconstructive method attacks the notion of an assumed presence that dwells behind the veil of words, that seeks to underwrite and insure a faithful interpretation of the text even in the absence of the author. The argument is compelling, but this is less clear when dealing with images other than writing – representational images or iconic signs- which have a clear and positive relationship to that which they represent. Of course, these images are not fully present, or unmediated, but they are present in a way that writing is not.

Derrida seems to be suspicious of visual images for attempting to preserve a presence that is absent in writing. Plato, in other words, values presence in speech while Derrida values its absence in writing. Accordingly, for Plato, images have too little presence, and for Derrida they have too much.

It is not just Derrida that is wary of the power of iconic visual forms, there is a long intellectual tradition. As noted, Plato too regarded them with deep suspicion. There was the Mosaic prohibition on creating referential imagery. This was not only incorporated into the iconoclastic movements of the Christian church, but found its strictest adherents in the Judaic and Muslim traditions. Its echo was also to be found in the writings of the influential critic Clement Greenberg. As also indicated elsewhere, it is a strong tendency throughout the modern French tradition of thought as tracked by Martin Jay. Perhaps these approaches might be seen as creating an inequitable binary that begs deconstruction since they seek to raise writing above its actual and essential manifestation as a form of image making. One moreover that fails to bear a trace of its

165 Jay, Downcast eyes: the denigration of vision in twentieth-century French thought, p505
167 Greenberg had a definite hostility to mimetic representational forms and saw the move to abstraction almost as a natural, (and certainly a logical) stage of higher evolution for art. See his: Greenberg, C., Art and culture: critical essays, (Beacon Press, Boston), (1965).
referent, and that denies the essential nature of writing as image based. In truth though the dichotomy is illusory, the linguistic symbol and the iconic image are intimately entwined, each leads to the other - images are incapable of communication without eventually failing into words; words unable to move beyond speech without the images of writing. In the imaginative mind, each triggers the other.\footnote{Calvino, I., \textit{Six memos for the next millennium}, Charles Eliot Norton lectures ; 1985-86., (Vintage Books, New York), Originally published: Cambridge, Mass.: Harvard University Press, 1988., (1993). p83 “We may distinguish between two types of imaginative process: the one that starts with the word and arrives at the visual image, and the one that starts with the visual images and arrives at its verbal expression.”}

Mimetic images have a resemblance that symbolic writing forms do not and thus they seem to hold a trace of presence that writing does not. There is no doubt that this ‘presence’ is illusory when considered as actual, but it is of an order that is not equivalent to symbolic representation. Still subject to the problems Derrida raises, this is not an absolute link but it is many degrees more positive than the symbolic one of writing. In a world of indeterminate possibilities and lack of absolutes, questions of degree are everything. It is a situation that poststructuralism is uncomfortable with and has yet to find a suitable explanation for, instead they reverse the situation and posit artistic images as ‘texts’ to be read.

Derrida correctly claims that traditional philosophy raises speech above writing in order to preserve an animating presence of the speaker, even when the true mode of philosophy is in the deferred form of writing. If philosophy is constructed in writing, not speech, and writing is a form of image making - then could it not be argued that philosophy is likewise a sub-branch of art? Indeed, all writing would become a form of visual art, although much less visually rich than most visual arts. It is perhaps a formulation Derrida might well have been happy with.
At The Tain

From Mechanics to Poetics

Until now this dissertation has largely dealt with the mechanisms of the mirror, but we have now reached a point of transition. Here we move from the receptive mode of reflection to the active one - projection. The following shards turn to deal with the poetics that arise from the previous mechanisms discussed. It is these poetic resonances arising from the mirror metaphor that have shaped many important features of contemporary Western culture or are capable of explaining them.

As indicated, we have reached a point in Western epistemology, art and culture where the foundational ‘tain’ of the human subject is dissolving. The planar mirror metaphor, and the simply fragmented mirror also, have been superseded. Instead the mirror metaphor is better understood as having been been roughly reconfigured into something approximating a mirror–ball. Under these circumstances, simple mimesis or a stylized representation, occupy a vexed position. In the first instance their relational links are a naïve. In the second, they return to a self reflexive modernism. In both instances, they are tools inadequate to ‘realistically’ picture the contemporary situation.

If we accept that there is no absolute foundational ground for epistemology, and that our language systems are not simple reflections, then I suggest a pragmatic approach is required. It is time to abandon metaphysics for something less grandiose. A solution might be the adoption of a ‘functional correspondence’ where our epistemological structures are accepted as being intrinsically allegorical and ‘kind of like’ what they represent. In this scheme, the validity of these systems finds their expression in practical effect, rather than abstract reason. Or rather, abstract reason must ultimately be tested in the materiality of the world. Note that in broad terms, this is something that both art and science do - test their theory in practice, and develop their theory from practice. It is, in fact, not paradigm as such. It is art rather than epistemology, and not a paradigm so much as a gesture, a tactic – indeed - a practice.
This emergent paradigm would be something along the lines argued by Elizabeth Grosz when speaking of the logic of research in the creative arts:

Only such a logic can mediate between the reflective categories of philosophical thought and the pragmatic requirements of an empirical object...Instead of the self containment of the syllogism (in which conclusions are logically entailed in validly constituted premises), a logic of invention is necessarily expansive, ramifying and expedient, producing not premises so much as techniques, not conclusions so much as solutions, not arguments so much as effects.\textsuperscript{169}

The mirror-ball is a device that indicates a means to escape the previous binds of the planar mirror and to provide a new metaphoric paradigm. Unlike the planar mirror which is often confused with ‘natural’ reflections, the mirror-ball is clearly a manufactured construct. It does not simply reflect that which stands before it, but because it is spherical, reflects from all angles. Unlike the planar mirror that has a dark back of non-reflective absence, the mirror-ball is not reducible to binary notions of front and back. It is not straight. It reflects from all sides. It does not focus in only one direction, but all of them at once. While it reflects, it projects, and the interrelationship of two mechanisms become self evident. Its illuminations are brief, tenuous, contingent. Yet since it rotates, it repeats. These are not simple repetitions however, but fugue-like variations. Like a fugue, that produces variant repetitions around a central theme, the mirror-balls’ repetitions around its central axis creates repetitions and reflections that are not debased \textit{copies}, but wondrous effects. These build to compound meanings rather than being diminished imitations of primary realities. When looked into, the mirror-ball creates not a unified illusion of the scene before it, but a fragmented mosaic resembling computer pixels.

It is the gestures and tropes that arise from the mirror-ball that might form the basis of a realist practice in the contemporary period. It evokes an allegorical practice

that recognizes correspondence is not a simple mirror but simultaneously acknowledges that if the ‘real’ is increasingly being constructed in Baudrillardian simulation, there is also a very material, real world outside of this. The approach is one that accepts neither of these is totalizing, or indeed, can any epistemology hope to be. It is an approach also acutely aware that within this situation, there are no end of pretenders dragging out the old planar mirror dressed up in new frames.

If this is the approach - how might a ‘realist’ or ‘representational’ art be realized in this era? Clearly, the mirror-ball provides an answer, but what should be its pivot point? For the moment, at least, and for my purposes, such an art should investigate the broader role of the mirror in contemporary culture. The following shards therefore trace out a territory of interest that is simultaneously played upon by the visual work in the exhibition *After Reflection*. Again, it does so in a subjective, fragmentary way – a somewhat erratic overview that seeks to illuminate specific points of interest. The shards and rays that follow seem pivotal to the contemporary Western culture, but it is only in the poetics of their effects that their relevance may be judged. It is also these following considerations that inform many of the key features of the visual work that is my practice.
Shard 3: Repetition

Repetition Introduction

At this point, much of the historical information needed to provide a background to the contemporary situation has been dealt with. The discussion can now shift to more directly consider Western contemporary conditions as symptoms and effects of the mirror metaphor.

Repetition is one such effect, resulting from the mechanisms of reflection and representation it is intermixed with. In reflecting, a mirror repeats an object, but as an image. This is a singular repetition – a simple double - but with the addition of other mirrors, this may become a multiple repetition – and this is, after all, the era of multiple mirrors.

In the current age repetition is rampant. While this is true in many areas, it is most notable in industrial modes of representation and those ‘mirrors for messages’ - mass communication technologies. So vast are these repetitions that they cannot be fully enumerated. What follows then, is intended to indicate the symptoms of what seems to be a terminal condition. This need not be maudlin state, however, for with the fever of delirium also comes inspired and compelling visions. Repetition, if continued and continued - and is then continued once again - becomes more than a simple copy. It is transformed into an ecstatic mirror of confounding complexity, akin to the Hall of Mirrors in a fun park. There might be a similar moment of panic too, when it becomes apparent that you are hopelessly lost, trapped within the glittering facets, and those who are running the show have no intention of letting you out.
Repetition Rays

Ray One: The Mirror and Industrialization

Contemporary Western culture is an industrialized culture, perhaps even a post-industrial culture. In such cultures, processes of production are rationalized and mechanised; labour highly specialized and routinized. Industrial culture is a culture of mirroring where the repetitions of production are reflected in all spheres of life. The aim of Fordist production methods was to reproduce on a mass scale, mirror images of a particular product. The production of repetitive multiples produced in series, required repetitive techniques of production. These in turn, have further repetitions built into their structures. To this end, casting - mirroring in three dimensions rather than two - was adopted to the new machinery. Casting involves an internal repetition, employing an initial mirror-like inversion from a positive form, to a negative cast and then back again. An industrial product is a mirror of a prototype model, the more exact the mirror, the better the product quality.

At the heart of industrial production and mass manufacture, are processes of mirroring and repetition. It was Andy Warhol who best pictured this in his silk-screens and portraits, where the world, the self and even death, were constituted within, and subjected to, a mirror-like serialization. In the industrial age, even death is produced in a standardized form - whether accidental (Saturday Night Disaster series) or within the confines of rational institutions (Electric Chair series) - both reveal mortality to be subject to the same, repetitive, routinization and reduction to a numb spectacle. (Plate X & XI) Indeed, 20th century industrialization allowed the invention of ‘mega-death’, where the experience of a single death could be routinely multiplied and repeated, pumped out with the cool efficiency of a production line – whether in the Nazi gas chambers or the vaporizations of a Hiroshima blast.

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170 Baudrillard argues that such repetition is at the very crux of Modernity. Caste societies, feudal or archaic, strictly limit signs and thus the repetitive production of imitations, copes and counterfeit signs are challenges to that exclusivity and a central tactic of modernity employed by the bourgeois. See: Baudrillard, J. "Simulations", Semiotext(e) 1983 (1983).84 trans. Paul Foss.
Techniques of mass manufacturing self-reflexively mirror themselves. Workers on a Fordist style production line perform a single or sequential series of repetitive tasks, each point on the line mirrors a predetermined set of gestures. In this sense, any worker mirrors the last, and working existence is reduced to embodying and applying a preexisting model of a sequential task. From a creative activity, work became routine and workers alienated from its inventive possibilities. As industrialism historically developed, the humans that performed these machine-like labours would be replaced by actual machines. The resulting unemployment seems not to have restored the creative potentials industrialization removed.

Under industrialization, the spatial and temporal structures of urban space are transformed into repetitive units to allow the smooth operation of the system. Thus the world itself has come to mirror the production line. Time is no longer based on a cycle of rotating seasons, each with their own particular conditions and changing labour demands. Instead, time becomes a linear force that repeats a 24 hour cycle of production. Each cycle is little different from the last, each a mirror of the first. Seasons are all but erased and no longer determining cycles of production, (tilling, sowing, reaping, laying fallow). The diurnal cycle became divided into a triadic structure rather than the bilateral one of day and night, each segment assigned their place within the cycle of industrial production. The day was divided into equal units - ‘Eight hours work, Eight hours leisure, Eight hours sleep’ - as the old worker’s slogan had it, somewhat wistfully it now seems, in the expanding work hours of the current period.\(^{171}\)

Much industrial production is involved in producing mirrors. This is quite literal as well as metaphoric. There are more mirrors in the world now than ever before. Mirrors are central to a large range of technologies, especially those of imaging, but reflective surface feature in all manner of products. Cars, for example, are moving mirrors, their buffed and chromed surfaces reflecting and refracting the world over their multi-faceted shell. Industrial production creates many such shiny reflective surfaces –

\(^{171}\) Initially there was a great deal of resistance to these rationalized modes of time that subjugated the ‘natural’ flow of the day for productive ends. See Weber, *The Protestant ethic and the spirit of capitalism*, p59-60
plastics, metals, glasses – surfaces that reflect and mirror a world evermore filled with surfaces that are mirrors.

Under industrialization, human activities become mirrored. This is not solely at the level of production but throughout the social and cultural spheres. The repetitive process of purchasing industrialized objects is echoed in the system of exchange itself - the repeated standard of currency that makes abstract, equivalent exchange possible. Likewise, the processes of industrialization are mirrored in consumption as countless bodies repeat the ritual of going to the supermarket, strolling its aisles, taking their purchases to the register, handing over the money, hauling them to the car, dragging them home, restocking the shelves and so on. There is an endless sequence of these actions repeated by the denizens of the industrial world - each echoing the other. Although there are countless variants on this basic theme, they amount to mere permutations as the basic structures are mirrored millions of time a day in the flows and activities of urbanization. It is not just this particular sequence of actions that are constituted in standardized repetitions, but all aspects of life. Whether it is going out to a nightclub, a restaurant, parking the car, watching television – whatever the circumstance - all are encompassed, reflected and repeated in the rationalized culture of industrial serialization. Ironically, this ubiquity and uniformity arises from a culture that privileges, above all else, the concept of the autonomous individual. It is a culture now less full of personalities so much as personality types – whose archetypes are expressed in the simultaneous model and shrine of the celebrity. Additionally, personalities are subsumed into occupation-based identities. There is the business type, the sporty type, the twin set type, the artistic type, the junky type – each adopting an established code of dress and personality type, repeated with the slight, individualized permutations of ‘choice’.

The dominant modes of entertainment are now industrially produced. Thus we have the movie industry, the art industry, the book industry, even the leisure industry – a situation where relaxation itself has become a branch of industrialized labour. These industries mass produce repetitive experiences capable of broad distribution and individual consumption. Rather than original objects, these are copies largely realized as
images. Their forms are standardized and repetitive by nature. Movies for example, are copied prints that are shown in cinemas whose very architecture is a permutation on a basic model, as might befit the exhibition of industrial art. Television is particularly repetitive. Not only are television programs repeated as ‘re-runs’, advertisements are repeated throughout them, and their formulaic plot structures are repeated by the various products of the industry. While these might seem diverse on the surface, the structure of soap operas, situation comedies and dramas conform to strict formulas. These involve A, B and C plot lines, predicted plot points and narrative highlights that must occur within seconds of pre-determined marks.\textsuperscript{172} Other industrial arts increasingly utilize mirror repetitions through the techniques of quotation, sampling, serialization and copying. Music is a case in point. In the past music was by necessity performed, now its most common form of manifestation is as a recording that repeats a distanced presentation. From an original presentation it now exists as a repetition.

Even when there is apparent innovation there is often little change. Surfaces may alter but the substrate remains the same. Brands like Kellogg’s Corn Flakes have not changed in 80 years, but the box is under constant innovation. Under Fordist production, the cost to re-design the superstructure of production and distribution ensured that any innovation was kept within predefined parameters. Thus the fundamental design and construction of the automobile, and the fuel source that runs it, has undergone few fundamental changes in the hundred or so years of its manufacture. In the period of ‘post-industrialism’, despite regular ‘upgrades’, core technologies remain relatively stable. Manufactures increasingly spend their money on ‘branding’ to achieve apparent differentiation within actual repetition.\textsuperscript{173}

As industrialism has increased and spread, the world has been remodelled to fit the dictates of its demands: “Repetitious spaces are the outcome of repetitive

\textsuperscript{172} In a conversation with film director and script writer David Caesar, he explained that the structures of TV narrative drama are rigorously predetermined and strictly applied. Whole scripts need to be changed if an event occurs seconds outside of a pre-established plot markers, character arcs or other structural points. No matter how successful the script might seem, it must conform precisely to the formula or be abandoned.

\textsuperscript{173} See: Klein, N., \textit{No logo, no space, no choice, no jobs : taking aim at the brand bullies}, (Flamingo, London), (2000). Chap. 1
gestures… associated with instruments which are both duplicatable and designed to duplicate.”\textsuperscript{174} Social and cultural space has come to mirror the structures of industrial production. The shape of cities, the architecture they contain, the flow of bodies through their space, has become increasingly standardized. This is most evident in the urban superstructures that provide outlets for the consumption of goods and services. Airports across the world have similar architecture based on the logic of passenger flows, luggage collection and product distribution. Likewise shopping malls, theme parks, fast food outlets and service stations are becoming almost indistinguishable. As nodes in the supply chain of industrial production that is fast becoming the world standard, they are repetitions of a basic model. Although there may be superficial regional differences, at the structural level, all appear the same. As if to signal their pivotal role in this mirroring of production and consumption, the interior spaces of these places are a dazzling array of reflective surfaces.

In recent times, as part of the move to Postmodernity, standardized production techniques have undergone a significant shift toward what geographer David Harvey has called Flexible Accumulation.\textsuperscript{175} Rather than the centralized Fordist model of production this approach is more decentralized and geographically spread. With the triumph over space that modern modes of transport and communication embody, it is now possible for factories distributed around the world to make single component pieces that are later transported to an assembly and distribution centre. In this way manufacturers may locate in those areas that produce particular components at the cheapest rate. Rather than single production runs of sameness over several years, (such as the T-model Ford that was produced virtually unchanged for twenty odd years) these companies now have short production runs. These produce many new models a year that intend to more closely reflect the manufacturer’s perceptions of shifting consumer demands. Rather than ‘vertical integration’ where a company ensured production by owning all aspects of the supply chain, in flexible accumulation, the company is often stripped back to a basic design and advertising team that out-sources all the labour, supply and production to the lowest competitive tender sourced from across the world.

\textsuperscript{174} Lefebvre, \textit{The production of space}, p.75
\textsuperscript{175} Harvey, \textit{The condition of postmodernity: an enquiry into the origins of cultural change}, see Chapters 8 and 9
Companies like Benetton led the way here, but others have been quick to follow. In the post-industrial condition that this signals, there is not an end to industrial repetition, but the reverse. Industrialization has accelerated and dispersed over a wider area. This process is most evident in the Third World’s rush to industrialize. As they do so, so are they drawn into the net of Western production and repetition, transforming their own spaces and cultures, into a repetition that aspires to mirror the West.

Localized variations of these mirrored structures abound but are like echoes that adopt some minor aspects of the surface conditions they strike but remain reflections of motivating, distant forces.

Ray Two: Machine as Mirrors

Machines and technology in general, are devices used to adapt the world to human needs. Technologies are a material means to extract desired human ends from the resistant physicality of the world. A technology may be as simple as a stick - machines are simply more complex technologies. Machines thus mirror and embody human desires. They are also objects that arouse and are subject to desire. They may even anthropomorphically mimic the mechanics of sex in their operation, or become the sublimated focus of sexual desires - the ‘auto-eroticism’ of car enthusiasts for example.

All machines mirror fundamental human, biological processes at a functional level. Like our language, they are practical means to manipulate the shape of things themselves. This is not always self evident but in all ways they are an extension and repetition of the human biological capacity. Machines mediate our interactions with the world to achieve desires unattainable with the human body alone - or to expedite those

177 This was a theme elaborated on by many artists of the 20th century – Marcel Duchamp, Francis Picabia and novelist J. G. Ballard among them.
that are. A stick may extend our arms and a computer may more rapidly processes calculations. The fact that the computer operates on the basis of a binary notation system quite unlike the operation of our own brains does not alter the fact that it mimics a particular procedure that might have been undertaken by a human brain.  

Machines are constituted in repetition – they are tools that repeatedly perform a designated function or set of functions. Our biological processes are also a series of repetitions especially those consumption, energy and waste production and, crucially, reproduction. Reproduction is the most repetitive of our biological functions and is determined by the most fundamental of all biological processes – mitosis – the reproductive division of cells. This essential and unchanging procedure has occurred since the first single celled organism and remains the fundamental reproductive operation of every cell, in every living being. We are biologically constituted in mirrored repetition. The materiality of the world a machine seeks to alter is, after all, the very stuff of ourselves.

Machines are designed to repeatedly perform particular tasks in a rational, logical, industrial manner. We make tools to change the world but they quickly alter the way we live in the world. Tools may mirror us, but soon we begin to mirror tools. As the means by which we mediate our interactions with the world, our machines determine our interactions with the world. Since they are constructed as programmatic reductions designed to perform limited tasks, so do our interactions become structured in their reductions. As we work through our tools, so do they start to work on us. Vilem Flusser echoes this point with regard to the photographic ‘program’: “…the camera does what the photographer wants it to do, and the photographer does what the camera

178 Remarkably, many computer operations are virtually repetitions of processes found in the human brain. The Jpeg compression codec operates by selecting for edges and assigning areas of similar colour and texture a uniform value in much the same way as human vision does. The Mpeg codec does something similar with temporal compression, only altering the significant differences between frames, in much the same way as the brain primarily focuses on shifting differences in the visual field. Furthermore, the brain does this for the same reason a computer does – to save time, space and ‘bandwidth.’. For a discussion of these and other analogous procedures including the close similarities between colour vision and colour television broadcast
See: Livingstone, Vision and art: the biology of seeing, p194 –6
is programmed to do.” As machines mirror us, we mirror machines. Like images in the mirror, this is a repetition that results in reduction and mechanization.

Language might also be thought of as a conceptual machine. We shape our world through machines of metallic muscle and machines composed of words, and the limitations of both become our own. We may become caught in the cogs of language just as surely as any other machine. Epistemology and as ideology, not only reflect on the world, they shape and delimit our interactions within their boundaries. Language subjects us to the repetitions of its syntax and circumscribes possibilities within prior meanings that we are forced to repeat. What may occur is that the machine rebounds on us and rather than being seen as a tool, may become yokes to which we shackle ourselves. Within the totalizing schema of ideology or dogmatic theory, particularized behaviour may be ignored as aberrant, or recast to fit the theory through coercive means. The subject may become subjected, forced to repeat the mechanical dictates of language this is ultimately realized on the body and experienced through the pain of the flesh.\footnote{\textsuperscript{180}}

Ray Three - Gutenberg, Mass Communication and the Mirror

Communication systems allow the repetition of messages over distance. A fundamental feature of contemporary Western culture is the power of its communication systems. The telegraph and telephone signalled the commencement of an era where space could be effectively banished; overcome by a representation so like the absent speaker, that physical absence seemed erased. The telephone allowed simultaneous, real-time communications over vast distances, a service now practically available anywhere in the Western world. The distance between New York and Melbourne is simultaneously great in real terms; and a distance of approximately 60

\footnote{\textsuperscript{179} Flusser p24 get ref
centimetres in virtual terms - about the distance it takes to raise a mobile phone to the ear. Mass communications technologies are perhaps the most remarkable invention of the modern age and are intrinsic to the compression of space into time that is also emblematic of the era.\textsuperscript{181}

Despite this, the original breakthrough in mass communication technology occurred many centuries before the telephone with the invention of the movable type printing press in the 15\textsuperscript{th} century. Crucially, this invention coincides with the time that metal planar mirrors were becoming commonplace.

The connections between the mirror and communication technologies is no accident, if rarely articulated. Neither is it generally known that Johannes Gutenberg, inventor of the printing press was a mirror maker. Gutenberg worked as a metal-smith and mirror maker in the years directly before inventing the printing press. He owned a mirror making business in Strasbourg in 1438 before returning to his native Mainz in 1444. Here he worked as a glass-maker and metal-smith. Although the exact date of the invention is uncertain, by 1455 he was printing the first ‘Gutenberg’ bible.\textsuperscript{182}

That Gutenberg was a mirror-maker explains much, and it is also a poetic way of expressing the creation of his most famous invention. The moveable type printing press allows text to be cast into blocks that are interchangeable and reusable. They may thereby be repeatedly used in new combinations and allow a mechanical production of text. More centrally, the raised fonts are mirror reversals of their positive forms. It is not too difficult to image Gutenberg holding a sheet of writing up to a mirror and seeing

\textsuperscript{181} For a general discussion of this see Kern, The culture of time and space 1880-1918; Harvey, The condition of postmodernity: an enquiry into the origins of cultural change; and Lefebvre, The production of space. Despite the triumphant claims made about mass communication technologies however, it should be noted that it has been estimated that up to 75\% of the world’s population has never used a telephone. Although this is more reliably stated at around 60\%. See the specialized United Nations agency report: 2003, Basic Indicators of Telephone Use (Statistical Table), Basic03, International Telecommunications Union, http://www.itu.int/ITU_D/ict/statistics/, 25 April, 2005
\textsuperscript{182} Pendergrast, Mirror mirror: a history of the human love affair with reflection, p38
the inversion of the text. It is also not hard to imagine him moving the sheet ever closer to the mirror so that finally the sheet kissed the glass. It is a small step in logic (but a giant, unprecedented one in imagination) to consider the possibilities of the mirror being a positive form. To imagine that instead of the mirror containing an image of text, it might contained actual text while the paper sheet stood empty and receptive. The printing press takes the inversion of text caused by the mirror and inverts it once more. The page becomes a mirror that reflects the metal plate of the press. The first kiss of paper and mirror has been repeated ever since, each time the mirrored text of a typeset (and later an offset) plate embraced the white paper pressed against it, and is inverted to become the printed page.

The process is not simply one of repetition but subtly reverses the relationship between original and copy – it is the original that is reflected and inverted and the copy that seems positive and correct.

Repetitions, inversions and contrasts are the very stuff of the printed word, as plain as the contrast between black text and white ground; the gulf between written word and its referent. The logic of the mirror – the logic of inversion and repetition – is at the very heart of the communications revolution that commenced with the printing press. It has subsequently found its way into the operating structures of all forms of mass communication. From the positives and negatives of photography, the oil and water repulsion/attraction of lithography, the serigraph dots of half-tone printing, the send and receive sympathies of radio and television broadcasts, the oscillation of radio waves, and now, the ‘on’ and ‘off’ binary computer notation of the internet – all are structurally realized in these repetitive inversions and reconversions.

Ray Four - The Mirror in the Age of Mechanical Reproduction

Repetition in the modern age is achieved like much else - mechanically. Walter Benjamin was among the first to seriously consider the effects of mechanical
reproduction on the Art object in his pivotal essay: “Art in the Age of Mechanical Reproduction.” He describes a world where the multiple, reproduced image was rapidly supplanting the physicality of the art object. In this mirror world of modern communication – described by Marshal McLuhan’s as a ‘global village’ or by Andre Malraux’s as a ‘Museum without Walls’ – the art object is often constituted as a mechanically repeated image existing in deferral rather than in its singular, present materiality.

In the Western tradition since Plato, the copy has been regarded as degraded, bearing only a pale and misleading relationship to the original and Benjamin’s basic assumptions concur. His is also a Marxist analysis that assumes that changes in the mode of production will cause alterations in social superstructure. He typifies this mode of mechanical reproduction as a fundamentally modern moment, instrumental in causing broad ‘superstructural’ repercussions. Benjamin ascribes a fairly positive role to this development, suggesting mechanical reproduction allows mass consumption of ‘art’, even if the object appears in a degraded form. He claims however, that as a result of mechanical reproduction, the authority and presence of the unique art object – what he terms its ‘aura’ - is diminished.

He remarks, “that which withers in the age of mechanical reproduction is the aura of the work of art”, the “quality of its presence is always depreciated”.

This seems correct in one sense – the materiality and the palpable history of the unique object are lost in the process of mechanical reproduction since they are unreproducible. However, this argument ignores one vital point. Benjamin ignores that writing itself is a form of image. Well before photography and other methods of

185 Benjamin, *Illuminations*, p 214
186 Ibid. p 215
mechanically reproducing images, writing was being mechanically reproduced. Indeed, writing is the primary form of mechanical reproduction since the invention of the printing press in the 15th century. As argued earlier, writing should be recognized as a visual image, a fact usually ignored by writers.187 Certainly writing is not iconic but symbolic and thus cannot be mistaken for the original as might happen with an iconic image but – and this is crucial to debunking Benjamin’s overall argument - neither is it diminished in being reproduced. Quite the opposite is in fact the case.

Apart from the visuality writing shares with other arts, words and images are intimate bedfellows. Images lead to words, words to images. Writing informs and explains these other arts. In Art itself, the aura is produced not solely by being in the physical presence of the object but in the knowledge that surrounds the object. The Mona Lisa’s aura is not self evident unless we are willing to ascribe supernatural powers to the object that would endow it an overwhelming, quasi-metaphysical presence. (Some art has something like this – a wondrous physical presence – even a ‘wow’ factor - but this is not what Benjamin describes as ‘aura’.) What gives the Mona Lisa its aura is, in fact, something formed in its absence. The painting was first given value by the fame of its maker. It now stands upon a plinth of scholarly dissertation and public commentary. It innovates within a tradition of Western representation that must be apparent to the viewer in order to appreciate it. In short, there is a discourse surrounding the work that, far from diminishing its aura, is responsible for its foundation.

This foundational discourse primarily finds its expression in texts - and these texts are produced by mechanical reproduction. What mechanical reproduction taxes in aura it more than recompenses in a direct and inverse relationship of fame.

Benjamin partly acknowledges this last relationship – “the film responds to the shrivelling of the aura with an artificial build up of the ‘personality’ outside the studio” –

187 A fact recognized all too well by some graphic designers who often seem to forget that words also have a signifying power beyond the visual - that they are required to be legible.
the cult of the movie star which he calls – “the phoney spell of a commodity.” Yet these processes also apply to other art as well. Works of art become famous as both an object and because of the reputation of their maker – the very cult of personality Benjamin dismisses. Moreover, artworks were always commodities. Indeed, it is no accident that “Art” itself was a nascent tradition at the time the Mona Lisa and the printing press were both produced. Far from accidental, this mechanism of mechanical reproduction actually fuelled the fame of artists and thus the aura of the work of art.

Fame is different from the aura as described by Benjamin, but it remains a central and constituting aspect of it. It is the discourse surrounding the object that is fundamental to its aura and even more perversely, in the conditions that Benjamin describes – where the world is swamped by reproductions – the result is that the original object is accorded an even greater value. (Witness the prices of paintings and other collectables in recent years.) Far from reducing aura, reproduction serves to increase it. The Mona Lisa has gained ever more aura and fame over the period, not less. The quasi-metaphysical state Benjamin ascribes to the aura of art is a secularized spirituality and began to emerge at the historical moment when the printing press was invented and the mirror too became more common. The link is central, not accidental. The aura is actually a result and function of mechanical reproduction and repetition (primarily those of the printing press), rather than its victim. Indeed, it could be argued that the notion of aura is intrinsic to the modern conception of ‘Art’ and squarely rests on mechanical reproduction.

In the age of mechanical reproduction then, the aura is not diminished, but something else is. What the work of art does lose in a world of mechanically reproducible images is what everything first encountered as a photograph or reproduction loses – their primacy and their tactility. We can no longer see such things in their raw, physical materiality - rather we recognize them from their photographs be they any famous thing – Mona Lisa, Effiel Tower or Jacque Chirac. Mechanical

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188 Benjamin, *Illuminations*, p224
reproduction in this way reduces, not just art, but *everything* to a surface, to an image, similar to that of the insubstantial image in the mirror.
Shard 4: Symmetry

Symmetry Introduction

There are many types of symmetries but only one is relevant here, the symmetry of left/right reversal seen in mirror images. This reversal is most noticeable in the substitution of the left hand for the right hand when seen in a mirror and in the mirror’s reversal of text. The cause of both has been a source of mystery through the centuries, especially why the mirror does not also reverse top for bottom as occurs with lens. The mysterious left/right reversal of the mirror echoes the broader left/right symmetry of the human body. For this reason, such basic symmetries are often considered beautiful and find their way into classical expressions of architecture, pattern making, decoration and so forth - as anthropomorphic projections of ourselves. Whether this basic symmetry is one fundamental to the world, or just our perceptions of it (as experienced through our roughly symmetric bodies) is uncertain. So too whether bodily symmetry is the result of some universal drive to symmetry, or whether there is a psychophysiological isomorphism – a structural symmetry between our psychological perceptual experiences and underlying brain events – are all aspects of broader epistemological debates that will find no solution here.

Mirror symmetry is central to the practice of many contemporary artists. Of course, this symmetry finds its way into a great number of other artists’ works as a compositional device, or because it is an implicit feature of the forms represented.

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189 For a discussion of these, and his own proposed solution to the quandary see Gregory, *Mirrors*, pp85 –102 He proposes that when we look at text in the mirror we are actually viewing it from behind and do not notice that we have already reversed the page to point to the mirror. If the sheet were clear we would see that there is no reversal at all. This has problems however. I have noticed that if you place a page of text flat before a mirror the text appears reversed even when the viewer’s position is arranged between the reflection and the sheet, so that the text is not reversed.

190 For full discussion of psychophysiological isomorphism see Palmer, *Vision science : photons to phenomenology*, p51

191 These include Sally Smart, Darren Wardle, Ed Ruscha (palindrome mirrored landscapes), Miwa Yanagi, Jackie Redgate, and my own work. The list is far from exhaustive.
Since mirror symmetry is so fundamental it is impossible to deal with it fully here but merely to indicate two aspects of its operation profoundly effecting the shape of things now. This section looks at mirror symmetry as a defining metaphor in two determining areas of Western culture – science and politics.

**Symmetry Rays**

Ray One: Fundamental Particle Physics and Mirror Symmetry

Symmetry is a pivotal idea in the sciences. It is often the symmetry and simplicity of a theory that scientists refer to when praising a solution as elegant or beautiful. One could consider mathematical equations themselves as examples of extreme symmetry – they are essentially tautologies whose equivalences are expressed in different terms - a symmetry which is visually articulated and acknowledged in the horizontal symmetry of the symbol “=”.

The search for harmonious symmetry in the pure sciences has often reached the absurdly metaphysical with physicists claiming to have peered into the mind of God, or found the essence of the Universe or other over-reaching proclamations. These hubristically ignore the shortcomings of other previously triumphant theories now consigned to history’s dustbin.\(^{192}\)

The three major symmetries encountered in the physical world are – rotational symmetry (such as demonstrated by a soccer ball), translational symmetry – (such as a railway line or a fence that looks the same as one moves along it), and – left/right or ‘mirror’ symmetry. The notion of symmetry is not simply a driving force in scientific investigation but an ubiquitously observable phenomenon. Many aspects of the world and its objects seem to demonstrate a tendency to symmetry (many others do not, of course). Yet so compelling is the observation of symmetry, that it was generally assumed by scientists that, like the macro-world, the micro-world of atomic interactions would also be harmoniously structured within mirror symmetry. The idea was even enshrined as the scientific concept of ‘parity’.

\(^{192}\) See here: Wertheim, *Pythagoras,*
By the early part of the 20th century it had been demonstrated that sub-atomic particles are ‘handed’ that is they have a rotation or orientation to the right or left. Many organic molecules, for instance, that share an identical structure will have what is known as a Chiral symmetry, a left/right handedness – a fact first discovered by Louis Pasteur. This reversal of basic structure has dramatic effects in determining the properties of the molecule. The same molecule that gives oranges their taste and smell – limonene - is the symmetrical reversal of the molecule that gives lemons theirs!  

Although this ‘handedness’ seems to be a universal structural feature from the molecular level to the macro level (from microscopic particles to the rotations of the planets) there is no reason why one “hand” should be preferred over the other. Thus scientists had assumed a basic parity would be preserved at all levels of physical interactions including at the sub-atomic level.

Before 1956 physicists had assumed that the laws of physics were symmetric under left-right symmetry. This would mean that for every fundamental microscopic process that is known to occur, the mirror image process should also occur.  

Various anomalies noticed in the behaviour of atomic ‘spin’ (also left and right handed) led physicists T. D Lee and C. N Yang in 1956 to test this grand assumption. They designed a series of experiments to test the orientation of electrons emitted from a material that was suspended in a magnetic field. Dramatically, the results revealed that the parity principle was violated: “the remarkable conclusion was that the fundamental

193 Gregory, Mirrors, p199 -200 This is the case with most organic molecules including those that are our food sources. This often makes half of what we eat indigestible since our bodies also demonstrate these levorotatory (left) and dextrorotatory (right) orientations and can only digest molecules that match their orientation. Taste, too, is a result of left and right handed taste buds responding to the orientation of these molecules.

laws of physics appear to be ‘left handed.’"\textsuperscript{195} Today this principle is generally accepted by physicists - but that does not mean they have to like it.

The drive for symmetry is so strong that much effort in contemporary sub-atomic physics is currently being spent trying to find a ‘solution’ to this ‘problem’ of parity violation. The weak nuclear force is the primary site for parity violation and it has been suggested that it may be the asymmetry of time itself that might be responsible for these reactions. Some scientists have thus suggested that time might occasionally run backwards to reverse these interactions and thus maintain parity!\textsuperscript{196}

Melbourne physicist Robert Foot has proposed the existence of ‘Mirror Matter’ to explain not just this parity violation but a number of other pressing problems in physics. Evidence of anti-matter was found in the 1920s, but Foot’s proposition is that there is an additional form of matter whose interactions with matter and anti-matter only occur with one of the four fundamental physical forces – gravity – and not with the weak nuclear force, the strong nuclear force, or with electro-magnetic force.

Imagine for each type of ordinary particle there is a separate ‘mirror particle’ that is, not only do we have photons, electrons, positrons, protons etc., but also mirror photon, mirror electrons etc. We can imagine that in nature’s mirror not only space is reflected but also particles are reflected into these mirror particles……. The upshot is that we cannot see mirror photons because we are made of ordinary matter. The mirror photons would simply pass right through us without interacting at all!\textsuperscript{197}

Foot’s theories are extremely interesting and could possibly solve many problems of contemporary fundamental particle physics.\textsuperscript{198} What is most interesting

\textsuperscript{195} Ibid. p9
\textsuperscript{196} Ibid.
\textsuperscript{197} Ibid. p110
\textsuperscript{198} Regrettably, although these are relatively easy and cheap to test for, there are currently no funds to do so.
here, however, is the continued resort of scientists to the metaphor of the mirror and the underlying compulsion to see symmetry maintained.

One thing which has become increasingly clear over the last century of scientific endeavour is the importance of symmetries. We know that the fundamental interactions of nature are, to within experimental precision, completely symmetrical with respect to rotations of space, rotations of space-time and translations of space and time. However, the most obvious symmetry of all – left-right or mirror symmetry – is inexplicably not a symmetry of the known particles since the ordinary particles interact in a manifestly left-handed way. This experimental fact motivates the idea that a set of ‘mirror particles’ exists. The left-handedness of the ordinary particles can then be balanced by the right-handedness of the mirror particles so that it becomes possible for left-right symmetry to exist along side the other known symmetries. 199

As can be seen above, there is an assumption that mirror symmetry must exist. Even when experiments indicate otherwise, there remains a drive to set this apparently disturbing notion ‘right’. Other sciences, including astronomy, are similarly filled with such metaphors of symmetries and equilibriums. 200

Does mirror symmetry represent a manifestation of a fundamental, inviolable, universal law or is it our own predisposition to see symmetries on the basis of our own bodily experience, that drives us to search for them even when the evidence against them is strong? Either way, mirror symmetries are driving metaphors not just applicable to broader Western culture but to those of fundamental physics and other sciences as well. Further, because this culture increasingly dwells in a constructed space, this symmetry becomes an evermore visible aspect of surroundings.

199 Foot, Shadowlands: quest for mirror matter in the universe, p221
200 In order to explain periodic meteor showers, there has recently been proposed by a number of scientists a twin dark star (currently invisible) to our Sun dubbed Nemesis. Whitmire, P. & Jackson, A. “Are periodic mass extinctions driven by a solar companion?” Nature, Vol 308, 1984 p 713 quoted in Ibid. p160 -1
Is seems strange that Western cosmologies that are supposedly ‘scientific’ - that is subject to disproof and reliant on demonstrable data - still seem to mirror the dominant social conceptions and structures of their day. There is no trouble seeing this when scientific thought considers the pre-scientific world of the Middle Ages and before. The pre-Copernican, Ptolemaic two-sphere universe was a metaphoric, symmetrical double of the Western political and social system of the time. Featuring clear structural likenesses - centralized/monachal, hierarchical/feudal, idealized/ideological and featuring a fundamental division between the physics of the earthly, sub-lunar sphere and that of the celestial sphere – (commensurate with the worldly division between the profane and the ecclesiastical) – the cosmos proved to be an uncanny mirror of the social. There is little doubt that the symmetry of the entire system was just too neat - a simple, mirrored projection onto the cosmos of the cultural, political and social structures of the day – a projection of the particular and social onto the universal and natural. But why should we imagine that we are immune from such an approach today?

Science, with its ‘falsification theory’ and reliance on testable data, is supposed to be able to avoid such projected anthropomorphism. Yet there is something odd afoot. Contemporary cosmological theories also seem to uncomfortably mirror social conditions experienced on earth. These are currently, unlike the strongly hegemonic period of the middle ages, not singular but multiple. Even this aspect seems to suit an age that self-consciously declares itself heterogenous. Science is, of course, not solely reliant on pure data for the ideas and ideals of its paradigms, but rather on a complex web of social influences.

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202 The key theorists here are Thomas Kuhn and his investigation of normative science and paradigm shifts, Imre Lakatos and his socially modified notion of science and Paul Feyerabend’s more radical, relativistic account.
The ‘Big Bang’ sounds rather like the creationist myth of Christianity (a fact, to be fair, that made its key advocate, and the discoverer of the ‘red shift’ that gave it weight, Edwin Hubble, very uncomfortable). The expansionist ‘big bang’ theory appears to comfortably fit an age of capitalist expansionism. The ‘steady state’ universes proposed early in the century, with their tendency to entropy and heat death, seem to mirror the general lassitude and dissolution of the old imperial order so poignantly felt at the time. Multiple universe cosmologies where all existence is an infinite number of forking choices that result in sequential permutations seem rather close to the age of consumer choice we are immersed in. Parallel universe theories or multi-dimensional universes seem to reflect the contemporary acknowledgement of variant ontological differences, parallel universes of culture and being. And so it goes.

These cosmological systems are not entirely fanciful of course but rely on evidence – but then, so too did the pre-Copernican Ptolemaic system. It is in the synthesis, analysis and interpretation of basic facts that these are transformed into supports for grand theoretical systems. Scientific theories are not constructed in metaphor entirely but they are expressed within them and it is at the level of metaphor that these symmetries reveal themselves. It is the metaphors of science along with data that drives the paradigms of science, as Kuhn points out: “…but the theories or conceptual schemes derived from these observations do depend upon the imagination of scientists. They are subjective through and through.”

Thus too is much of our knowledge a vast and uncertain poetic, driven by aesthetic decisions and interpretations, as much as those of brute fact. The symmetry between our cosmologies and our worldly conditions seem to mirror our own presumptions and preoccupations too closely to be mere coincidence. They seem to be

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203 For a discussion of his discovery and its implications see Wertheim, M., *The pearly gates of cyberspace: a history of space from Dante to the Internet*, (Doubleday, Sydney), (1999), pp 1559 -165
204 "The observations available to the naked eye fit the two-sphere universe very well…and there is no more natural explanation of them." Kuhn, *The Copernican revolution: planetary astronomy in the development of Western thought*, p44
205 Ibid. p26
reflections on the universal limited by an inability to transcend our own image in the mirror.

Ray Three: Mirror and the Cold War

The dominance of the mirror metaphor found a fulsome expression in the political activities of the 20th century. The politics of the century was constituted within a metaphor of mirror symmetry and revealed in the opposed political forces of the left and the right. Like the metaphors of sub-atomic physics, the overriding themes for these interactions were parity and inversion. Following the Communist revolutions in Russia and later China, and especially in the period following the Second World War, the world was cast into the political spheres of East and West. The ‘free world’ and the ‘Eastern block’ were divided by the metallic tain of the ‘Iron Curtain’. It was a political division that was further reflected at the national level of parliamentary democracies in the divide between the parties of the left and those of the right. The world was cleft in twain along a bilateral, ideological axis. Of course, conditions were much more complex than this, but such was the overriding logic and descriptive rhetoric of the time.

The political division required a mirror symmetry, a parity between the two spheres of power. The doctrine of MAD (Mutually Assured Destruction) assumed that each side must achieve a correspondence in weapons and military capabilities, not weapon for weapon, but a broadly equivalent capacity on either side of the scales. A superiority in tanks could be offset against a greater number of infantry and so on. This parity was ongoing, and when one side improved their capacities for mass destruction, the other side countered with increased proficiencies. Thus there was a race between two opponents, each forward stride mirrored by a complimentary advance by the other side - an arms race, a space race, a race for higher living standards. Once the Americans had gained the atomic bomb it was imperative the Russians produced a bomb. Once the Russians achieved rocket orbits outside the earth’s atmosphere, so must the Americans. The quest was for superiority rather than parity, but for peace to prevail, parity could not be violated.
Along with this parity and symmetry came a mirror inversion. In the rhetoric of the day one side became the inverse doppelganger of the other. Depending on which side of the divide one stood, the other side appeared as the inverse negation of itself. One represented freedom, the other constriction. One side stood for opportunity, the other for oppression. One side was good, the other evil. The accusations were interchangeable and expressed symmetrically by each side. The world was divided into a binary opposition of mirror symmetry and this found its way into all manner of political, social and economic theory.\(^{206}\)

With the collapse of one side of the equation – the collapse of the Soviet block – there has been an imbalance. Like the scientist who cannot accept a fundamental asymmetry, rather than the system of binary mirroring collapsing, there has been a recasting to provide another inverse, yet complimentary, opposite for the West to oppose. Most recently this drive for symmetry has been found in a far more amorphous enemy – Terror. The war on Terror is being configured in much the same way as the Cold War and if the mirror paradigm does not collapse, terrorists will be seen as the new enemy and a new justification for further arms spending, further internal repression, further fear of the mirrored Other.

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\(^{206}\) It was a state evocatively pictured at the time by Joerg Immendorf’s *Cafe Deutschland* series of paintings that embodied the dissociative effects on the Self that living in the divided nation of Germany had during the period. (Plate XII)
Shard 5: The Displacement and Transformation of Space

**Displacement and transformation of space**

**Introduction**

The mirror displaces objects. It shifts their location elsewhere, transforming them, and the space surrounding them, into another materiality – a two-dimensional image. The mirror is a powerful device capable of magical effects. Since the emergence of the planar mirror in the 15th century and its subsequent refinement as a large scale glass mirror, it has been instrumental in altering space, both real and pictorial, transforming, dislocating, and reorganising it. As the following shards attest, Western culture is a space of displacement and transformation.

**Ray One: Reduction and the Mirror**

MIRRORS REDUCE. JUST AS AN ECHO IS A TRUNCATED AND ALTERED VERSION OF AN ORIGINAL SOUND, SO TOO MIRRORS LESSEN THAT WHICH IS PRESENTED TO THEM.

**Brilliant painter of an inimitable art**

You create without any effort an inconstant work

That always resembles and is never like.207

To look into the mirror is always to see a lesser version of the self. Gone is the inner world of the mind, so too the felt experiences of the body, all such corporeal complexity reduced to a single plane. The process is a parallel with reductive, rational modes of thought that seek to reduce phenomenon to essences. Broadly, as we have seen, such a reductive vision has been the mainstay of the Western philosophical tradition since Kant. It is arguable that what is presented in the mirror, and in these

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intellectual mirrors, is not an essence but a shell stripped of its essence. Whatever the case, a reductive ‘essence’ it is not the whole story.

If the mirror image is mistaken as the sum of the actual Self, what occurs is a form of alienation. Feuerbach described the process where a religion may attribute human characteristics to the gods and thereby alienate these aspects from the human.\textsuperscript{208} In this way, reductive systems of representation and epistemology may also limit the plethoric nature of experience. Like a road cut through a forest, these structures provide an efficient and effective means of reaching a destination, but similarly bypass a more complex experience. This is what happens when a photograph is mistaken for an ‘accurate’ representation, or when conceptual frameworks are mistaken for actual conditions. When the descriptive becomes prescriptive, the complexity of lived experience is similarly reduced. In contemporary Western culture, these reductive frameworks have become normative in all areas of existence.

Mirrors reduce and abstract experience. In this regard, the uncertain, shimmering reflections of a still pool; the distorted images of the convex mirror; or the dim, deep images of metal mirrors with all their inaccuracies and incompleteness, might have been a more ‘accurate’ portrayal of the complex self than the startling clarity and the sharply delimited image seen in the modern mirror. So too, have our rational conceptual frameworks substituted clarity for complexity, recasting space and all within it, to a faint reflection of embodied existence.

Ray Two: Disembodiment and the Mirror

As objects move from the substantiality of world to the tain of the mirror, there is a disembodiment. What has solidity in the external world is diminished to become a

luminescent shadow of itself in the mirror. The mirror strips away corporeal phenomenon, reducing objects to a semblance of themselves.

This disembodiment is also a symptom of conditions found in the modern industrialized West. The effect of much technology is to reduce corporeal experience to a flattened, almost one-dimensional, state. The body’s movements are restricted in the modern world, required to fit around the neatly designed, rational space of street and building. The body is less subject to any movement, having many of its actions automated by machines. Escalators and elevators remove the need to climb stairs just as stairs reduced the need to scramble over uneven surfaces. Cars and trains speedily float us above the ground, our legs mere dangling appendages. The triumphs of the brain’s engineering schemes are at the sacrifice of the body’s repertoire of movement and are a move toward avoiding labour. Bodily labour is not abolished however, merely transferred or deferred. In the modern city, whilst one may avoid arduous climbs, one must work elsewhere. Meanwhile somewhere else in the system a mechanism that will save you toil on other occasions is produced. Someone else’s labour is substituted for yours – someone else produces the escalator - but like images in a mirror, this labour is transferred and distant. (Increasingly in the West this is very distant – to the Satanic mills of the Third World.)

Transport in general is a symptom of this general disembodiment where bodily movements are transferred into mechanical flows. The condition of disembodiment is even more broadly experienced however. In the past, much of what was experienced as part of everyday life has now been sequestered away, if not entirely erased. Sewerage and the commode toilet removes much of the stink of human existence. Specialized labour means that most of us are not subject to the blood and violence that produces our daily meat. In short, much of what were once everyday, physical, corporeal experiences have been disembodied in a manner which parallels the disembodied operations of the mirror. The very structures of our industrialized existence operate as a mirror on the physicality of the body, reducing it, abstracting it, transferring it.
Ray Three: The Mirror and Alternative Worlds

Look into the mirror and you see, not just yourself, but another world. It plunges off toward a distant vanishing point apparently obeying all the perspectival laws found on this side of the glass, but - can you be sure? The presented vision seems not just a corollary of this world, but a world unto itself. There are peculiar things there – reversals of left and right, odd angles of reflection and vision. These anomalies suggest the possibility of a world beyond our own – one faintly symmetrical but containing an inexact symmetry not unlike that found between the two sides of the human body, reflected along its vertical axis. In the earliest reflections, those seen in water, the viewer saw another world – a world beneath the surface of the water. With the invention of the mechanical mirror, this world - seen as a supplement to the reflection - was suggested rather than actual, and thus its possibilities could multiply. In catoptrics – divination using the mirror – alternative visions arise from the mirror as portents of the future, spaces yet unseen, and allow the teller to see another space hidden from immediate view. Visions in the mirror suggest the world reflected as an image may be as real as the world outside the glass.

The alternative worlds evoked by the mirror is a theme adopted by various artists but none so wonderfully than the poetic worlds created by Lewis Carroll and Jean Cocteau. Although an anathema to the rational modern mind, the mirror still holds the latent possibilities of an alternative space existing just around the curve of the glass. Considered in this way, mirror reflections do not reduce, but extend the possibilities of the world into another, expanded space and more fulsome dimensions - parallel worlds.

We need only consider space as it unfolds before us on this side of the glass to realize that it contains dizzying possibilities of metaphor. Gaston Bachelard does just this, unpacking the poetic metaphors of actual space.\(^{210}\)

Bachelard’s monumental work and the descriptions of the phenomenologists have taught us that we do not live in a homogeneous and empty space, but on the contrary in a space thoroughly imbued with qualities and perhaps thoroughly fantasmatic as well.\(^{211}\)

But as Foucault additionally points out, these possibilities have their limits.

We do not live inside a void that could be coloured with diverse shades of light, we live inside a set of relations that delineates sites which are irreducible to one another and absolutely not super-imposable on one another.\(^{212}\)

Foucault describes additional spaces, founded in actual space but existing somewhat apart so ‘as to suspect, neutralize and invert the set of relations that they happen to designate, mirror or reflect.’\(^{213}\) he describes these as two types - utopias and what he calls ‘heterotopias’ that are defined by a particular set of social relations that distinguish them from normative spaces. Examples include cemeteries, cinemas, honeymoon suites and others – all places that are actual but also between-states of normal social relations. Additional to these spaces is a third, indeterminate space, that both nonetheless resemble - the mirror.

I believe that between utopias and these quite other sites, the heterotopias, there might be a sort of mixed, joint experience, which would be the mirror. The mirror is, after all, a utopia, since it is a placeless place. In the mirror, I see myself there where I am not, in an unreal, virtual space that opens up behind the surface; I am over there, there where I am not, a sort of shadow that gives my own visibility to myself, that enables me to see myself there where I am absent; such is the utopia of the mirror. But it is also a heterotopia in so far as the


\(^{212}\) Ibid. p231

\(^{213}\) Ibid. p231
mirror does exist in reality, where it exerts a sort of counteraction on the position that I occupy. From the standpoint of the mirror, I discover my absence from the place where I am, since I see myself over there. Staring from this gaze that is, as it were, directed toward me, from the ground of this virtual space that is on the other side of the glass, I come back toward myself; I begin again to direct my eyes toward myself and to reconstitute myself there where I am. The mirror functions as a heterotopia in this respect it makes this place that I occupy at the moment when I look at myself in the glass at once absolutely real, connected with all the space that surrounds it, and absolutely unreal, since in order to be perceived it has to pass through this virtual point which is over there. 214

I would argue that something akin to the in-between state of the mirror as described by Foucault exists and is becoming more prevalent in Western space. These are the ‘mirror-lands’ found in colonized countries and in the virtual space of the computer. Each are simultaneously alternative, extended spaces embodying strange symmetries lying somewhere between both the utopias and heterotopias described by Foucault. They are also like the delirious, liminal ‘mirror’ spaces of immersive spectacle found in the Neo-Baroque, virtual-reality rides of theme parks, described by Angela Ndalianis. 215

The shards that follow deal with the real space of colonies and the virtual space of computers as symptoms and examples of the spaces and mechanisms described above.

Ray Four: Mirror World – European Colonization of Space

With all that has gone before, it is now possible to provide an overview of the mirror metaphor and its impact on space. In particular to consider how the metaphor

214 Ibid. ( pp231 - 232
operates to determine and explain the historical forces that have shaped contemporary Western space.

An overview argument of this sort might run as follows:

The great age of European exploration and expansion begins in the 15th century and continues until the present time. These explorations witness not just the ‘discovery’ of spaces previously unknown, or only guessed at by European civilization, but causes the subsequent colonization of these.

These explorations into real space commence around a time when the mirror becomes an increasingly commonplace object and when there is a major breakthrough in mirror technology – the production of large scale, planar glass mirrors. At the same historical point, the invention and development of linear perspective allowed a system to mathematically picture representational space. This pictorial system is partially a result of this new technology and emulates the space pictured by mirror images. As Panofsky has pointed out, perspective was not just a mode of representation but may be understood as a symbolic expression of the self.

Thus the history of perspective may be understood with equal justice as a triumph of the distancing and objectifying sense of the real, and as a triumph of the distance-denying human struggle for control; it is as much a consolidation and systematisation of the external world, as an extension of the domain of the self. 216

The development of a system to map and control the appearance of pictorial space also allowed a system on which to base actual incursions into that space since it allowed a “homogeneity and boundlessness foreign to the direct experience of that space.” 217 In systematizing and universalising space, its particularities could be ignored

216 Panofsky, *Perspective as symbolic form*, pp30 -31
217 Ibid. p31
for a more general conception of space – “Exact perspectival construction is a systematic abstraction from the structure of this psychophysiological space.”218. With the subsequent invention of an allied mathematical mode of systematizing space - the Cartesian grid – accurate charting of actual space in a pictorial form was possible. This effectively allowed the possibility of repeating the results of exploration, enabling mariners to mirror the voyages of their predecessors on the basis of accurate maps and charts.219

Simultaneously actual space was being reorganized. The space of Europe was systematically altered, grided and reformed on the basis of this new and rational organizational principle. The land itself becoming a mirror of systematic space, composed as a painter might order their picture.

The production of a luminous space and the emergence of that space did not as yet, in the thirteenth century, entail either its subordination to the written word or its mounting as ‘spectacle’. …. [by the 15th century] the trend toward visualization, underpinned by a strategy, now came into its own – and this in collusion on the one hand with abstraction, with geometry and logic, and on the other with authority. ….This was to be the space of the triune God, the space of kings, no longer the space of cryptic signs but rather the space of the written word and the rule of history. The space, too, of military violence – and hence a masculine space.220

Lefebvre describes what he terms as the transition from ‘absolute space’ to ‘abstract’ or ‘social’ space- a logical, rational space of urbanization, that saw existing space largely as a tabula rasa to be altered at will. This conception was hampered in Europe by preexisting histories embedded in architecture and remnant space and

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218 Ibid. p30
219 This accuracy was not made complete until a reliable way of measuring longitude was found in the late 18th century with the invention of Harrison’s chronometer. However, this was a technical refinement, the conceptual mathematization and plotting of space into coordinates was already well in place and allowed an ever growing accuracy in navigation. For detail of the longitude problem see: Sobel, D., Longitude : the true story of a lone genius who solved the greatest scientific problem of his time, (Walker, New York), (1995).
220 Lefebvre, The production of space, pp261 –262 inserted parenthesis are mine.
culture, far less so in the new world. There the commensurate cultural structures of tribal societies, were either unrecognized, ignored or more easily swept away in the grab for vast tracts of nominally ‘empty’ space.

This abstract space brought with it a gamut of rational structures including the ‘mirrors’ of an ever expanding communications network.

…this communications network was simply the physical reflection – the natural mirror as it were – of the abstract and contractual network which bound together the ‘exchangers’ of products and money.\(^{221}\)

These networks, that so resemble the projection lines of perspective, spread as a homogenized influence on the ‘unknown’ world, along with the invading Europeans.

The ideology of humanism, connected to the development of mirror technology, also arose at this time. Just as perspective had overwritten differences in psychophysiological space for a more universal, abstract conception of space, so too did this nascent humanism abolish particular difference in the human subject for a totalizing vision. Although the intention was a liberating, universal consideration of the human subject defined in existential equality, this human subject was not multivalent but constituted in European terms. No matter, this new human subject was soon projected by Europeans onto the rest of the world and would eventually find political expression in the various bourgeoisie revolutions of the 18\(^{th}\) century. The foremost of these - the American War of Independence – occurred, not accidentally, in the New World.

Crucially, European exploration and redevelopment of space is intimately tied to the new pictorial system of perspectival representation, itself a mirror of the mirror. Colonization is therefore coupled to the development of mirror technology and the development of colonization is understandable through the mirror metaphor.

\(^{221}\) Ibid. p 266
These new European colonies were not just an outcome variously provoked by
the mirror and its technologies, their actual spaces were also metaphorically recast as
mirrors. Although already occupied, they were transformed to become ‘mirror worlds’ -
mirror images of the settlers’ (European) countries.

There are three phases of political colonization. There is the initial phase of
invasion and establishment, there is a secondary phase of occupation and bureaucratic
domination of the conquered country and there may also be a final stage of economic
colonization. Here the colonizers dominate the new country to such an extent that it is
no longer necessary to physically occupy the place. Rather, they may control its major
directions and decisions through economic devices and levers at a distance – a stage
usually referred to ‘post-colonial’ or as cultural and/or economic imperialism. (A
situation only possible with the advent of those mirrors of absent presence - modern
modes of communication)

During the first phase, the new land is a vision of a parallel space – a space seen
through the looking glass – similar to the old world, but full of anomalies and wonders.
In the second phase, the ‘aberrations’ of this alternative space are flattened to become a
reflective plane set to mirror the culture, space and traditions of the colonizing country.
In the third phase, the space is no longer a simple mirror but an engulfing ‘mirror-land’.
The inhabitants live within a space that is like the ‘in-between’ space of heterotopia and
utopia described by Foucault - a mirror-land - neither here nor there, neither a perfect
reflection nor a space of its own.

Following the colonization of real space has been a fourth phase of colonization
– the colonization of virtual space, or more precisely, the virtual space of the computer.
This colonization of data-space has uncanny parallels with those of real space and

222 Terry Smith describes colonization with a similar triatic structure that he describes as –
calibration, obliteration and symbolization (aestheticization). The processes he describes could
all fit within the first and second stages described above. See: Smith, T., 'Visual Regimes of
Colonization. Aboriginal seeing and European vision in Australia', in: Mirzoeff, N. (Ed) The
completes this overview discussion. However, it is first necessary to address the colonization of real space in greater detail.

In the first phase described above, explorers were confronted by spaces filled with apparently known, yet strangely different flora, fauna and geography. At least, this was true when conquering the northern hemisphere. The southern hemisphere proved another matter, and Australia was the most alien of all these ‘new’ spaces. In this first phase of colonization then, a new vista opens out before the conquering armies, settlers and other occupiers. The time was one of dimly perceived similarities and differences, both glossed over and shocking in their newness. The new land mirrors back the hopes, the anxieties and the imported knowledge systems of the settlers. New species are given common names on the basis of faint similarities and there is a strange doubling of vision where the local view is overlaid with visions from the old country. What is most visible in the new space is that which best reflects the desires of the colonizers, or conversely, that which most dramatically fails to reflect such desires. It is a dream-world of potential space. It exists in relation to the colonizing country in the same way that Lewis Carroll’s Looking Glass world related to Alice’s everyday world - an alternative world of distortion, unexpected transformations and transmutations.

Peculiar in so many ways, Australia also yielded up a vast new repertoire of fauna and flora with Banks and Solander collecting over a 1,000 new species on the voyage with Cook see White, R., Inventing Australia : images and identity 1688-1980, Australian experience ; no. 3., (George Allen & Unwin, Sydney), (1981).p6 As an unforeseen effect too, these new species and the need to ‘accurately’ describe them become an emphasis for the abandonment of the classical style as first indicated by Bernard Smith in his pioneering treatment of post colonial issues. See: Smith, B., European vision and the South Pacific, 1768-1850 : a study in the history of art and ideas, (Clarendon Press, Oxford, Eng.), (1960).

This is particularly the case with animal and place names - Murray Cod, Australian Salmon, Newcastle, New South Wales and so on.

This is most visible in the painted landscapes of early colonization, peculiar amalgams of Australian flora and European vistas (see Plate XIV) or in the rapidly shifting emotions of Thomas Watling’s letters “Britain, I believe, still entertains, and very justly, an idea of the sterility and miserable state of N.S Wales. It will be long before ever it can even support itself” and then a paragraph later describing Parramatta. “The Poet may there descry numberless beauties; nor can there be fitter haunts for his imagination. The elysian scenery of a Telemachus.” etc. Watling, Thomas in “Gibson, Ross ‘This Prison this Language: Thomas Watling’s Letters from an Exile at Botany-Bay 1794.’ In Foss, P., Island in the stream : myths of place in Australian culture, (Pluto Press, Leichhardt, N.S.W.), (1988). p 10

Landscape painting plays a key role in this early phase as a means by which to impose an imported view onto the space, as a means to digest the particularities of the place, as a means to map and picture the space, and as a means of transporting an image that might be viewed, and possessed, in the home country. These operated as both real estate brochure and trophies from...
The second phase of colonization is one of actual mirroring. Here the new dominant force in the land physically remodels the space and all that it contains, the social order, the personal hierarchies, the agriculture, the names of places, the methods of production – to mirror those of home. The grand, over-riding desire is to transform this new space into a mirror of the homeland. This succeeded in varying degrees – the British had great success in Northern America, less so in India. There was always a resistant local population and conditions that caused the mirror reflection to distort or to be otherwise modified. Although the ideal would be a linear, planar mirror, often times as not, the resulting mirror is less than fully ‘accurate’ – and there will always be blemishes in the glass, casts in the tain.\footnote{227} The differing space of the new country is flattened out to become two dimensional, a reflective plane that mirrors back the conditions of the colonizing country.

In the final phase, the physical infrastructure of colonial rule has been imposed and the colonial overlords have more or less complete domination over the country. Alternatively, there may be a ‘post-colonial’ imperialism. In this case, the colonizers have retired from the actual space, but so control determining economic forces that they are able to exert (in varying degrees) political and social pressures from a distance. The inhabitants nevertheless occupy a country transformed to resemble another. Rather than an alternative space, the inhabitants are living in a mirror-land. That is, from simply reflecting aspects of the country of origin it has become like an alternative version of the colonizing country itself. It is no longer in the process of being transformed into a mirror; it and its inhabitants have become the reflection in the mirror. This reflection is never perfect however, and will depend on how successfully the colonizers have wrought their mirror from the raw materials uncovered in the new

\footnote{227 My visual work over the past 8 years has often been based on an image of the word ‘echo.’ The letters of this word are seamlessly incorporated into the architecture of the scene. The intention is to evoke a situation where there is a repetition and copying of distant forms but, like an echo, one that takes on characteristics from the surface from which it bounces. In this way an echo becomes something new, more than a simple copy although retaining an ultimately derivative form. It is not simply a copy but a positive elaboration.}

space. Additionally the locals might attempt to smash the mirror that holds them captive through a political process of post-colonial independence - even so, the shards of the mirror remain embedded in the flesh of the fledgling nation state. The mirror-land, then, is not slavishly dependent on the actions of an original source but has a life of its own - it is something of a doppelganger.

From this overview it is clear that the transformative effects of the mirror in shaping Western space have been vast. Both an engine, and result of this transformation, the mirror is now a meta-sign for modernity and now, hyper or post-modernity. Given their intimate link with colonisation, little wonder then, that mirrors were always among the first gifts proffered to native populations at the time of their invasion.

Ray Five: Australia as Mirror World

One of the new ‘mirror world’ spaces to have resulted from the forces outlined above is Australia. It is the experience of living in this space that is a central interest of this paper and the visual works of the exhibition.

It was a supposition of mirror symmetry that brought European explorers to hunt for a great Southern land. It was thought that the land masses of the North should be balanced by one in the South – a supposition wrought from an aesthetic sense of equilibrium that was strangely if only approximately, borne out in fact.\textsuperscript{228}

‘Terra Australis Incognita’ was conjured up in European imaginations as a mirror image of the Northern land mass and thus it appeared to them. All manner of inversions and reversals were anticipated, as would be expected of a mirror-land – and

\textsuperscript{228} Suspicions of an ‘unknown south land’, (in Latin a \textit{terra australis}) can be traced as far back as Ptolemy. Davison, G., Macintyre, S., Hirst, J. B., Doyle, H. & Torney, K., \textit{The Oxford companion to Australian history}, (Oxford University Press, South Melbourne, Vic.), (2001).p42
the country did not disappoint. Expecting these inversions early settlers also found them, often perhaps, to the exclusion of similarities.

Swans and people were black, not white. The seasons were reversed. Water drained anticlockwise. The leaves of the trees drooped down rather than growing up and refused to fall down with the seasons. And the animals – all manner of strangeness, unnatural perversions and inversions. Mammals laid eggs, there were fish that breathed air, four legged creatures that bounded about on two. Furry creatures with webbed feet and duck bills, cute possums that screamed like devils and not a cow-like thing in sight. The land continued its inversions in the very nature of settlement - unlike other European colonies of entrepreneurial merchants and free settlers, this colony was to be founded by their polar opposite –fettered and forced convicts.

To live in a colonized nation is to constantly see oneself in a mirror. What surrounds one -the structures of being, the modes of thought are not indigenous - but are reflections of a place far distant. As Marx made clear in his formulation of historical materialism, from the physical demands of a place arise the modes of production and in turn, the social condition, culture and so forth. These emerge organically from the necessities and demands of the space from which they grow. In the case of colonialism, however, such institutions are imposed from the top down, springing Athene-like into existence, fully armed and fully grown, with little regard for local conditions. Where local particularities do intervene, they are considered as inconveniences and hurdles to be overcome.229

In colonized spaces where this occurs, the structures, institutions, laws and cultures that result all seem strangely mismatched, without roots or clear cause. They exist without the historical specificities and conditions of place, tradition and material

229 A good example of this is the number of so called ‘acclimatization’ societies that flourished in the late 19th and early 20th centuries in rural Australia. In the interests of acclimatizing the country these groups were responsible for the introduction of no end of foreign species that have since become scourges – rabbits, foxes, blackberries, willow trees etc.
necessity that caused them to emerge in their home country. It is an experience common to strongly dominated colonies like Australia. There is much here that is mirror like. Things suffer reversals or inversions. The feeling of existence seems dyslexic. It is like looking into a mirror where one moves their left hand and their right hand seems to respond. Winter festivals such as Christmas occur in summer. The ancient Spring festival of pagan origins, Easter occurs in the southern hemisphere at exactly the opposite time of year, in autumn. Rebirth is thus celebrated at a time of diminishment and death. Seasons are reversed. Geographical points become like the right hand/left hand mirror reflection problem – what is accepted as the far East is actually the near West, the near East the far West. Native animals are treated as pests and forbidden (!) as pets while destructive imports are farmed or cosseted. Above all else the natural skin tone of the country – black – is reversed for white. Along with the importation of whiteness come all the Western constructs that regard blackness as inferior, suspect, malign, sinister and white as light, good, clean and so on. Moreover, whiteness is seen as natural, neutral in comparison to the otherness of blackness as evocatively described by Richard Dyer.230

All these reversals, like the reversal in the mirror, are not absolute but a question of perception, the result of adopting a particular point of view. They emerge from the assumption of, and domination by, an imposed point of view – European, Northern, white, Anglo-Saxon – one wrong-handed in this hemisphere. The resulting dislocations are not unlike the aphasic responses of those left handers forced to grow up right handed. To engage in discussions regarding world affairs one is forced to adopt the terms assumed by the dominant position, displacing the validity of one’s own, experienced point of view. Although this might sound like a small thing, it is indicative of a whole way of being. As a colonized country, as an Australian, one sees oneself as if in the mirror looking out. It is the mirror that is the point of origin and it is the Self that becomes the reflection.

Australia is still a mirror that commonly reflects a wide variety of social, cultural, political trends popular in the rest of the world; albeit, some time later. This was true even before the current era of ‘globalization’. In many ways Australia, with its lack of a clearly articulated sense of self seems a secondary culture. Historically this has been the cause of an almost perpetual hand-wringing that seemed to obsess its intelligentsia until very recently. In the late 1980s this was cleverly embraced by the artist Imants Tillers who noted that in the world of postmodernism, where all of life seems mediated and secondary, Australia was no longer a provincial outpost. Since we had always operated on the basis of mediated, second-hand images and culture, he argued, we were in fact, at the very centre of the post-modern condition. No longer an outpost of art centres such as New York, we were the centre and they, our provinces. We were, he declared, the most postmodern nation on earth. Tiller’s argument was not merely clever but also resonant. It also underlined the notions of inversion and reversal keenly felt at the time and that still continue. Few people resident in international art centres paid much attention, of course, since these inverse feelings and the desire to overcome them are particular to colonies but it was a game and witty effort. It did, however, retain an essential binary distinction between centre and periphery and thus also collapsed under its own logic - how can one be first and centre in a decentred world with no point of origin?

Ray Six: The Mirror of Eden

The mirror plays a key role in first contact between the 18th century white invaders and the Australian Aboriginal people. Again, the mirror operated not just as an important object in itself but as a metaphor and a sign underlying the events. Small glass mirrors were often offered up to Aboriginal people at first contact from an imagined sense of utility and because their relative newness as a technology made them an object of some wonder even to the whites. If first contact happened today, the equivalent might be the colonizers handing out laptop computers. Most of the evidence is that

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231 For his discussion of the general framework see particularly: Smith, T. "The Provincialism Problem", Art Forum Vol 13(No. 1)1974 (1974). but there are countless other examples of 'cultural cringe'.

232 Currently the issue seems to have simply disappeared, submerged by a passive acceptance of globalization.

these gifts were briefly examined, caused some minor interest and then were largely ignored as irrelevant and useless novelties - much as a lap top computer might be received by a nomadic hunter-gatherer in today’s context. Instead, a great deal more favour was found with objects of greater utility, especially the much sought after iron hatchets.

At the eponymous Looking Glass Point near present day Gladesville, a mirror was presented to a native on 15 February 1788. Seaman William Bradley recorded in his journal:

When he looked into it, he looked immediately behind the Glass to see if any person was there and then pointed to the Glass and the shadows which he saw in the water signifying they were similar.

Rather than shadows, the man was probably pointing to the water to signify the mirror’s similarity with the reflections that were usually seen there, these being the only mirror-like images the Aborigines were likely to have experienced and the most obvious parallel with the mirror being presented to him, (the hasty, literal assumptions of daft seamen notwithstanding.) The function of mirrors were obviously known to Aboriginal people since the function is the naturally occurring one of reflection. This too was a reason why mirrors were not terribly valued in a society that was constituted in community rather than within an ideology of individualism. Familiar enough with reflections, but not being constitutive of their culture, (unlike that of the whites) what was the use of mirrors?

Mirror symmetry, however, plays an important role on a symbolic level in the processes of gift exchange. Gift exchange is a complex phenomenon common to all societies requiring obligations and reciprocities that mirror the ties formed when gifts

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Smith notes that the effectiveness of iron hatchets compared to stone axes resulted in a power imbalance favouring those individuals and tribes that obtained them. He recounts one such shift after Cook visited Tahiti. As a result of the gifts, a local chief was able to construct a large sea force of canoes and subjugate the local islands becoming the High Chief. (p148)

235 Ibid. p152
are given. Although only dimly aware of the complexities of this, or considering such exchanges through the lens of 18th century contractual property relations, these white gifts immersed the givers into a complex set of preexisting relationships that they were largely unaware of. Reciprocity and some respondent exchange - like the angle of incident equalling the angle of reflection - is the rule of gift exchange. Where these angles differ, where asymmetry exists, there is an additional obligation and the need to return relations to harmonious equilibrium. Although the finer points and cultural specificities of the Aboriginal point of view were unknown to the invaders, the whites took it as axiomatic that their gifts would be reciprocated in some way – good will, barter, property.

Is it not appropriate then, with all this giving of mirrors so prevalent in the accounts of first contact, that they also bristle with descriptions of Aboriginal mimicry? Within minutes of sitting at Governor Phillip’s table for tea, Bennelong was holding his cup and behaving as if he had always done so. The Aboriginal capacity and enthusiasm for mimicry was regularly remarked upon by the whites. Mirrors were being held up to those who brought mirrors. The gift of a mirror which allowed the satisfaction of personal vanity for the whites, held no real interest for the Aboriginals who had scant regard for them. In return for their gift of vanity, the Aboriginals returned the gift of mockery - mimicry held up as a mirror to European behaviour. The invaders saw it, but did not recognize it for what it was.

The mirror underlies many ‘first contact’ relationships with the indigenous people of Australia and elsewhere – not just in this literal manner, but metaphorically as well. There is a description by Lieutenant David Collins of a small family group on the rocks of what is now Bennelong Point. Indeed, part of the group was Bennelong

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236 See Mauss, M., *The gift: forms and functions of exchange in archaic societies*, (Cohen and West, London), Translation of *Essai sur le don.*, Cunnison, I., (1970). “The form usually taken is that of the gift generously offered; but the accompanying behaviour is formal pretence and social obligation and economic self interest.”
p1

237 “…he preforms every action of bowing, drinking healths, returning thanks &c. with a scrupulous exactitude.” From the King journal, 9 April 1790 [MS C115 ML] Cited in Smith, *Bennelong*, p 43

238 Ibid. Similar remarks feature in many other first contact accounts.
himself. A canoe carrying two women pull up to the rocks, they alight while the man lights a fire and cleans the fish they carry with them. Lying in the sun they prise open pristine fresh rock oyster from the shore, feast on the fish, breastfeed the child and after eating, fall asleep in the sun. This scene is an idyll, reported in simple straightforward style. Yet it is something that might reasonably be recognized by the Europeans as part of their own romanticisation of lost nature. Certainly it plays into the noble savage ideal, yet it was also real life – an example of the way the Eora people lived for many thousands of years, in a cycle of life that repeated itself, echoing down through the generations as a virtually unchanged, circular sequence. If not exactly Eden, this seems like a place not far away and not so far distant in time from the pre-Lapserian moment so mourned by European culture. In its endless repetition of simple existence, pre-invasion Australia was a place like Eden, a place outside of time, a place where nothing, nothing ever happened.

The notion of the noble savage draws much from the Christian mythology of Eden, an idyllic place of nature and ignorance where things remain suspended in innocence. The lived experience of tribal societies and especially those as ancient as in Australia were similarly repetitious, cycles of existence suspended in recurring ritual, rather than linear, time. What the Europeans looked at, but only dimly perceived, was their own most ancient myth reflected back to them. Here, was, for all intents and purposes, Eden. Was it the inversions that threw them? The reversal of the seasons, the heat in Winter, the blackness of the skin? What made them not recognize their most pivotal myth being played out in front of them? Was it their own role, as the intruder into this garden that made them repress what they saw, to look away from the mirror in front of them? Could they not know that the mirrors, hatchets, cloths, all these fruits of the European tree of knowledge were the harbingers of the fall? When Bennelong reached out for the first food offered at the Governor’s table he and his people began to fall into the mirror of 18th century Europe - a fall into a new and dispossessing knowledge. Soon they would be banished from their own lands and into harsh deserts.

239 Ibid.p3
240 “They live in a Tranquillity which is not disturb’d by the Inequality of Condition: The Earth and sea of their own accord furnishes them with all things necessary for life, they covet not Magnificent Houses, Household-stuff &c, “ and so on. Captain James Cook, in Edwards, P. (Ed.) The Journals of Captain Cook, (Penguin, London), (1999). p174
The water springs would dry from overuse, the fish would disappear and in the year following the arrival of the whites, a small-pox epidemic would leave an estimated 50% of the local Aboriginal population dead.\textsuperscript{241} The events around the foundation of the colony at Botany Bay and Farm Cove, echo and mirror a fuller version of the Christian Bible’s first account of human eviction and colonization.

Ray Seven: The Mirror and Virtual Space

An aspect of the mirror not focussed on directly to this point, is the fact that it is capable of rendering an image in real time - a dynamic, moving image. Like the mercury amalgam of the modern mirror’s tain, images in a mirror are mercurial. Likewise, contemporary culture and space are dynamic, constituted in quicksilver shifts. The post modern condition is one where solidity and stasis has given way to constant alteration in all spheres of existence. “That which the spectacle ceases to speak of for three days no longer exists.”\textsuperscript{242} Marx’s prediction that capitalism, an essentially revolutionary system, would result in a situation where

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, … \textsuperscript{243}

seems to have come to pass, but without the bit where:

man is at last compelled to face with sober senses, his real conditions of life….\textsuperscript{244}

\textsuperscript{241} The actual figure is unknown and although it is certain that many hundreds of the local Eora and Cadigal people died. ‘the small Pox raged among them with great fury and carried off Great Numbers of them. Every boat that went down the harbour found them laying Dead on the beaches and in the caverns of Rock …’ Newton Fowell, Batavia, 31 July 1790 in Smith p 33. This figure of fifty percent, attributed to Governor Phillip (13 February 1790 Historical Records New South Wales 11:308) but on the basis of information from Bennelong himself, is at best an estimate. ‘it is not possible to determine the number of natives who were carried off by this fatal disorder. It must be very great,; and judging from the information of the native now living with us …” Smith, Bennelong, p46


\textsuperscript{244} Ibid.
In a world that flashes like quicksilver, perhaps it is not surprising that any number of imaging technologies have been developed with the capacity to represent movement. Examples of these primarily include cinema but also television, internet animation - and most recently - immersive reality rides, video games and simulators.

With the exception of immersive reality rides that may use a combination of moving physical objects and projected images, all these are examples of virtual imaging. Like mirror images, they are images composed solely of light and are thus truly two dimensional having no materiality beyond that of light rays (unless one dubiously includes the screen as part of the medium). The increasing presence of such images as they come to saturate space (what waiting room does not have a television in it?) is both an indication of the age’s infatuation with the moving image and the fact that an increasing number of our actual life experiences are composed of these virtual experiences embedded in the world of the everyday. This increasing experience of mediated sense data being consumed as if it were direct sense experience, the virtual commingling and perhaps, co-determine, with the plane of existence – has now become a second, or perhaps, third nature. This has been the subject of a number of treatments - variously described as spectacle, hyperreality, post-modernity – but whatever the label, they are symptoms and defining aspects of contemporary conditions. The following ‘rays’ turn not to look exhaustively at the examples of all these mediums but to focus on the most recent of these technologies – computer imaging and, in particular, three dimensional modelling – often referred to generically as virtual space but perhaps better described as data-space.

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245 Ross Gibson expresses this nicely: “What DeLillo gets exactly right is the ardour with which people of all stripes seem to address the moving image. In any film fan – critics and theorists included – there is something elemental poised and playing, something zinging in the nervous system and fizzing like desire all the time the light and lines are skittering within the framed screen.” Gibson, R., "Moving Image - Quickness", in: Wissler, R. H., Brad; Wallace, Sue-Anne; Keane, Michael. (Ed) Innovation in Australian Arts, Media and Design (Post Pressed, Flaxton, Qld), (2004). p65

246 See: Wark, M., *Virtual geography : living with global media events*, Arts and politics of the everyday., (Indiana University Press, Bloomington), (1994). Wark uses this term to denote the flows and vectors containing images and information.

247 Key here is the work of Debord’s *Society of the Spectacle* and much of Baudrillard’s works but particularly “Precession of the simulacra.” For a consideration of these as ‘third nature’ see the discussion in Ibid. particularly pp176-7
As mentioned above, there has been a fourth phase of colonization, the ‘discovery’ and settlement/invasion of virtual space. The discovery and occupation of virtual space coinciding with the invention of computer systems and the internet has followed a similar scenario to that described in real space. Colonisers have always proclaimed their initial contact with lands previously unknown as ‘discoveries’. They are however, only discoveries for the colonizers, not for the people already living there. Never in the history of colonization was there empty, virgin space benignly awaiting occupation – this is the great myth of exploration. The space of the ‘New’ World was never empty - instead there was always some prior occupation.

This is also true of the current occupation of virtual space. It is imagined as a practically infinite realm of empty space – a blank sheet on which the possibilities of the ages may be written and explored but in fact virtual space, like real space, was already occupied before its ‘discovery’ in the 1980s.

The Cartesian/Newtonian space found in 3d and CAD modelling programs, in video games and in the hierarchical systems of information that order operating systems, the internet and in the interfaces of graphical interface user systems (GUIs) - all pre-existed as systems of organizational logic and modes of representation commensurate with ‘abstract space’ and have been simply adapted to the demands of the new space as if teleported there. Imposed onto and organizing this space, the process is a direct parallel to the great age of European colonization. Indeed, the very structures that were imposed on the new world at that time – Newtonian/Cartesian/Perspectival space (the abstract, social space of Lefebvre) are presently the same structures that organize the virtual space of the computer.

It might be argued in contradistinction to real space, these virtual spaces were created, not ‘found’, and this is the case. Virtual space was the direct result of industrial
mechanisms and the logic embedded in the conceptual systems that power them. Having produced the hardware on this basis, however, the virtual space of the computer has no set obligation to be structured along the lines that brought about its ‘discovery’ but could be organized in any way we saw fit. Like the colonization of real space, there was no compelling teleological imperative to emulate and impose the structures of the old world on that of the new. Even at the time of colonization, the ‘progress’ claimed by European invaders were, in reality, only self-legitimizing rationalizations. Although virtual space could be constructed in any manner imaginable, what appears to be imaginable still finds itself trapped within the confines of the mirror and its defining set of relations. Like the settlers of the real world, the developers of cyberspace find they cannot escape their past (nor want to, it seems.) Partly this is due to the fact that these spaces, like the real world new spaces of European expansion are only opened up at tremendous cost, involving specialized and expensive machinery, crews of technicians, programmers, and lots of money. Also like those previous European expansions, these virtual ‘discoveries’ involve the central participation of military personal, funding, forces and goals. Like the explorations before them, they are largely sponsored activities produced with certain expectations and goals in mind – and these tend to be ones premised on the ideological continuity of ‘abstract space’. Thus these virtual spaces are reflections of a particular perception of real space - the so called ‘reality’ of the Cartesian grid, perspective and linear time.

Interestingly this is a link often overlooked in some discussions of ‘cyberspace’. Margaret Wertheim for instance suggests that unlike the cosmos described by Dante in his Divine Comedy, the world of computer games and virtual reality is fundamentally different.

The ‘virtual worlds’ being constructed on computers today usually bear little or no relationship to the world of our daily experience. For most VR pundits, escape from daily reality is precisely the point. Dante, however, was not trying to escape daily life; on the contrary he grounded his ‘virtual world’ in real people, real events, and real history.248

248 Wertheim, *Pearly Gates*, p52
While it is true that the fabulous scenes of hell were not a fiction to the readers of Dante in the way that the world of *Quake* is to contemporary players, at a structural level video games replicate precisely the ‘abstract space’, the Newtonian/Cartesian/perspectival space, that remains the dominant conception of real space. In this they are a simple, projected continuum of dominant conceptions of space, just as Dante’s universe mirrors Pre-Copernican, Ptolemaic space. The more fabulous aspects of game play, where players have extraordinary powers and abilities, are like magical exaggerations of normative physical conditions since they occur in counterpoint or addition to the structural norms the game is based in. As contrasting supplements they therefore ultimately reinforce the structures they are defined in opposition to. Video games are escapist in this sense - they bend the rules of normative experience into fantasy - but perhaps no more so than the fact that Dante was able to travel through the afterlife and back. Similarly the phantasmagorical characters and situations of video games owe their virtual all to preexisting genres of science fiction, fantasy, combat games and other fictional structures that exist within the other mediated sense data of our everyday world – literature, cinema, television, comic books and others.249 These may not be believed in the same manner that a medieval serf believed in the world of God and Devil, but what Dante describes was his particularized vision of events located within the commonly believed spatial structure and system of his day. So too do video games reflect the popular conception of space as photographic and incorporate more general cultural myths, icons and narrative structures drawn from the world of fiction. If many of these are ‘virtual’ their presence in the everyday experience of mediated forms makes them no less ‘real’ to today’s players than Dante’s ‘real people, ‘real events’ and ‘real history’” were to his audience, most of whom had no direct experience of the things and people he referenced. Both spaces – VR games and the cosmology of Dante - end by reflecting the spatial and social structural conditions of their day and, if anything, demonstrate more similarities than differences as mirrors of their time.

These new virtual spaces stand like the vast uncharted lands stretched before the early European explorers. They are lands full of giddying possibility, a chance to

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249 Increasingly too, these games are mirrors of other narrative forms, often developed in response to comic books and especially movies: *Superman, Spiderman, Batman,*— a seemingly endless list. It can also go the other way with video games being turned into movies as was the case with *Lara Croft, Street Fighter* or *Final Fantasy.*
begin afresh. Unlike real space, the restrictions on the possibilities are largely self imposed. Like the colonization of virtual space however there are actual inhabitants currently in this realm who will suffer actual hurt depending on the nature of the expansion into this new territory. Although currently occupied, the natives are not innocent of the coming invasion but are the very corporations, military and telecommunication agencies who constructed the platforms through which this space unfolds. In the tradition of early colonization though, there are also present a number of unrestricted individuals and groups – cowboys, pirates, evangelists, free settlers - who would reconstruct the space in new and different ways to the prevailing orthodoxy. It is telling then that these new spaces, emulate the same structures of construction that occurred at the point of European expansion, that is, they and the software that produces them, are premised on the Cartesian grid, the rules of perspective, linear and sequential time – all the keystones of a Newtonian universe. As they share many of the same features of other ‘realist’ media and narratives – it is not for nothing that they are referred to as virtual reality. What is disappointing is that this should be so – there stands a huge potential undeveloped space before us – virtual certainly, but conceptually it might take on any number of potential forms. What is plumped for at a structural level at least, is however, the same old ‘reality’.

Attendant to this, the representations being made possible by three dimensional modelling programs are often described by their developers and users as achieving ever advancing levels of realism. In one sense they are – photon rendering programs for instance allow the calculation and representation of bounced light and ambient light effects. The ‘accuracy’ and ‘realism’ these programs have achieved however is not in reference to actual human perception or even with broader conceptions of ‘reality’ but with photographic representations. The images achieved are becoming ever more like photographs and, in the case of the moving image, CG is becoming indistinct from actual filmed footage – but these are taken at face value as being more realistic in a general sense. Such are the confusions that the next ray reflects upon.

250 This argument was unselfconsciously advanced by a number of speakers working with 3D modelling software at the OzViz conference but is common to general discussions of the technology. Oz Viz Conference, University of Melbourne, 20 December, 2003
Three dimensional computer modelling programs replicate Cartesian space. When an operator opens a new file the default view is a perspectival, three quarter view seen from above with a Cartesian grid laid out across a black void – a new, vacant but familiarly structured land of pre-determined coordinates that stretches out before you like the idealized space of the colonist - empty and entirely subject to your will. The space mirrors Cartesian perspectival space although there is no fixed point of view, or rather, there is an infinite number of these. Like the eye of God, the operator may move through the space in whatever direction they see fit. Platonic solids of sphere, cylinder, cube and pyramid may be added to the scene, joined, stretched and deformed to be the basis of more complex forms in a ‘high-tech’ version of Cézanne’s famous phrase. Additionally, more complex forms modelled from vertices points or from spline shapes variously extruded, can also be combined with the basic solids to produce more elaborate forms.

Lights of any imaginable sort may be added and positioned to light the scene. The ‘wire-frame’ objects can be given textured skins that emulate colour, reflectivity, transparency, refraction index, shininess, highlight, bump or surface texture and glow – in short they may emulate the surface characteristics of any known (and unknown) material. Backgrounds, atmospheres, skies, oceans and terrains may all be formed at will and the resulting model animated. In the final procedure the model is rendered. In the process of ‘ray tracing’ the computer calculates and emulates the real (if Newtonian) world of light interactions. The virtual light rays, travelling from each light source in the scene are mapped, ray by ray, according to their predetermined characteristics. Light reflects from the surface of objects and is traced back to a receiving eye in exactly the same way as a perspectival scene is constructed. Photon rendering or global illumination

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251 There is a visual parallel here that has been incorporated into my paintings for some years. This black, absent void has an echo in the symbolic use of black ‘grounds’ in the paintings. These stand as ciphers for both the absence perceived by colonists, the black Newtonian void of space itself, the black void of virtual space, and the literal black ‘ground’ of Aboriginal occupation prior to invasion that remains an underlying presence – covered but not erased. Who has not felt this presence still well up from the ground beneath their feet in quiet moments in the Australian bush?

252 Mitchell, *The reconfigured eye : visual truth in the post-photographic era*, p121
programs complicate this procedure by additionally calculating the effects of bounced light within the scene – a process that exponentially lengthens the rendering time with many billions of additional light calculations needing to be made. The results are often remarkable for their ‘reality’ - but now we must pause.

Although I indicated the light rays travel back to the point of view occupied by an eye, this is not the case. Instead of an eye, these programs substitute a virtual camera and rather than moving through the scene as an eye might, this camera dollies, pans and zooms. The camera has all the attributes of the actual instrument it emulates – depth of field effects, varying lens sizes, apertures and speeds. Thus 3 dimensional modelling programs entirely replicate a particular reality – that of the photograph or, if animated, of the cinema. This is a world seen through a lens – it is a virtual mirror of the mirror with a memory.

What exactly is the thing produced by this process? In one sense it is a model but although it may be used to model preexisting structures - a house for instance - it may also be the model on which a construction in real space will be made – a house for instance. Indeed in the current era this symbiosis is increasingly the case. More and more of our environment is first designed in such computer programs. Yet what the programs model at a structural level, is not actual space, but Cartesian ‘abstract space’ and the Newtonian physics found in the photograph and in perspectival representation. In an actual sense, we may exist in the relativistic physical space of Einstein but we actually inhabit a Newtonian universe. Increasingly this space of habitation is being designed on the basis of systems of representation located in the mirror. Ironically Einstein’s space may have superseded that of Newton but above the level of the sub-atomic many of its effects are unnoticed. Newtonian physics on the other hand, useful as they are in the macro world, are a severely reductive physics that fails to model actual conditions. Its suppositions and formula cannot, for instance, be applied to non-linear flows or systems. Yet it is precisely these non-linear systems that make up most of the interaction in the natural world. Nonetheless, the West has historically overwritten

these non-linear systems with the linear reductions of ‘abstract’ space and with these computer programs this has accelerated immensely. The irony is then, in an era of heterogeneity and relativity, we are increasingly under the hegemonic sway of a reductive linearity, that determines the very fabric of our manufactured existence.

Pivotaly, these models may be output using Lightjet photographic printing. Here a laser directly exposes photographic paper from the information contained in a digital file. The process thus substitutes the use of a negative. The exposed paper is then developed as normal, just as a photograph would be. As well as being materially the same as a photographic print, the results can be formally indistinguishable from a photograph of real space. This alone raises questions regarding the status of the final object – is it a photograph or not? Is it the negative in photography or is it the print that is the original? 254 If the negative, then must it be on photographic film and if so, what makes a digital file – such as commonly now found in digital cameras - not a negative? Surely a Lightjet photographic print must be considered a photograph since it embodies all the processes of photography and is expressed in the materials of photography. But this also complicates the notion of photography itself. Photographs, have always been assumed to bear a ‘trace’ of a once present form that existed in the world. Whatever their formal qualities they bore an indexical relationship to an actual object, space, person. “In short, the referent adheres.”255 Leaving aside for a moment the manipulation of the photographic image that might occur in the computer (or the darkroom) this relationship of correspondence has been considered as fundamental as the relationship between the object and its reflection in the mirror. Yet here is an image of a scene that is entirely virtual with no real existence except as a series of binary pulses of electricity. The photograph then does have some form of indexical relationship in these circumstances - it bears witness to the previous existence of a series of pulses but this is something very removed from a notion of ‘existence’ usually associated with photography since the final image does not in any way resemble its source. If they are

254 Sherrie Levine’s photographs of Walker Evans prints, signed and exhibited as her own also problematize any quick answer that the original lays with the negative.

representations they “must be regarded as the representations of a reality that is itself already nothing but the play of representation.”

These images are easily mistaken for ‘real’ scenes recorded photographically, and must be considered as more than just copies. When Plato proposed the notion of the copy and the original he assumed a resemblance that would underwrite the connection and make it possible for the two to remain separate and unconfused. The threat to the system, to the mirror metaphor of epistemology and to representation generally, is that of the simulacrum – the false copy - ‘an image without resemblance’. That is not to say the simulacrum is without similarity, rather, as Giles Deleuze points out:

Without doubt, it still produces an effect of resemblance; but this is an effect of the whole, completely external and produced by totally different means than those at work within the model.

The great threat of the simulacrum is that it may be confused with the demonstrably inferior, secondary, but well-founded pretender - the copy - and may thus usurp the whole system of Ideals and images, originals and copies, objects and reflections, realities and representations.

The copy is an image endowed with resemblance, the simulacrum is an image without resemblance. The catechism, so much inspired by Platonism, has familiarized us with this notion. God made man in his image and resemblance. Through sin, however, man lost the resemblance while maintaining the image. We have become simulacra.

Photographic simulations seems to best way to describe the Lightjet images described above. False copies of a non-existent scene, they are mirror images - photographs of non-existent objects that nonetheless appear as direct reflections of actual space.

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256 Batchen ‘Ghost Stories: the beginnings and ends of photography’. p8
257 Deleuze, The logic of sense, p57
258 Ibid. p258
259 Ibid. p258
The spread of simulation is a result of our fall into the mirror world that constitutes contemporary Western space, a situation much broader than this particular example. What makes these three-dimensional images and computer models so pivotal in the current moment, is that they are increasingly the basis on which much of this space is refashioned. Based in an abstraction of space derived from the mirror, so too does our space become ever more abstracted, ever more simulated, ever more mirror-like. In the irresistible words of Jean Baudrillard:

The territory no longer precedes the map, nor survives it. Henceforth, it is the map that precedes the territory – precession of simulacra – it is the map that engenders the territory and if we were to revive the fable today, it would be the territory whose shreds are slowly rotting across the map…. it is the real, and not the map, whose vestiges subsist here and there, in the deserts which are no longer those of the Empire, but of our own. *The desert of the real itself.*

Perhaps the often remarked upon ‘realism’ achieved by three-dimensional modelling programs are not the result of the programs becoming more like the ‘real’, but the fact that the world is increasingly being remodelled to be like these computer programs.

**Ray Ten: Digital Files and the Abolition of the Copy**

Consider that from Plato on there has been the fundamental assumption in Western philosophy that any copy will be a secondary, inferior being of mere resemblance. With the advent of the digital era this ancient scheme is confronted not just with the blurring of the line between virtual and real but with a new fact, an *essential lack of difference between original and copy*. A copy of a digital file is no different from the original file. Indeed, any subsequent copies made from the original do not spiral out and away from the point of origin in ever diminishing verity, *but are intractably, exactly, the same as the original file*. The distinction between original and copy collapses. Resemblance and the plane of representation collapses substituted for simultaneous, parallel existence.

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*260 Baudrillard, *Selected writings*, Chapter 7 “Simulacra and Simulations” p 166*
Certainly the ghost of Plato returns when this file is produced from a digital camera. The real world as the point of origin returns and is more complex, more full, more real, than the inferior and degraded digital copy. However, when a file originates entirely on a computer – as in the production of a file from a three dimensional modelling program for instance, there is no such reduction – the copy of the file entirely mirrors itself. More than a mere mirror, it is a complete double in every way, not a mere reflection. If the content of two such files are compared, they would be entirely indistinguishable. The venerable conception of difference between original and copy thus melts away. In these circumstance, does Western philosophy too, melt away?

Ray Eleven: The Screen and the Mirror

Until now, a screen stood between us and the world of images. This is both metaphoric and in the case of virtual images, actual. The glassy screen of the CRT monitor is not unlike the still body of water prior to the invention of the mirror. The screen reflects back an image of the operator and the real world superimposed over the interface that lies beneath its surface, disrupting a smooth transition from the space of the world to virtual space. Less so with the new technology of LCD screens. These have a more matte, velvety surface with no hard glass and the user might only glimpse themselves as shadowy silhouette if at all. The surface reflection does not impede the user becoming immersed in the screen’s depths but is a pliant membrane that enmeshes and enfolds the user. This technology is becoming an ever more immersive aspect of real space. Their flatness allows them to be placed in spaces previously too restricted for a monitor and they thus increasingly invade all manner of actual spaces - cash registers, mobile phones, personal organizers, as advertising screens in businesses, retail outlets and street corners often serving as monitors for surveillance. The screen is becoming more plaint, enfolding the viewer in its virtual space and saturating the space of the actual world making the two spheres – the virtual and the actual – extensions of each other. The fact that these spaces are owned - immersed within the flow of capital that they propagate through the advertising which is their staple display - makes virtual and actual space evermore commensurate with capital itself.
The screen is thus dissolving or - perhaps better – expanding, to engulf the world of experience. Beyond the notion of the screen lies the future possibility of immersion in virtual space. As Mitchell remarks, (with virtual realities):

...you are not limited to just looking at digital images' you can actively *inhabit* and closely *interact* with them.  

Already there are virtual reality rides that combine digital modelling with moving platforms to create virtual experiences of disorienting ‘reality’. There have been a great number of theorists who suggest that even the cyberspace of the internet is a form of other worldly experience embodying an uncertain ontology. As Wendy Hui Kyong Chun neatly puts it: “By passing in cyberspace, one supposedly escapes from representation and representivity.” At a recent conference the process was described with the following diagram that showed an ever increasing dissolution of the screen to a point where we stand not on the other side of content but immersed within it.

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261 Mitchell, *The reconfigured eye: visual truth in the post-photographic era*, p80
262 One such ride in Sega Mega world in Tokyo, Japan. It recreates a raft journey down river rapids. Riders sit in a large inflatable raft facing a 180 degree screen with a computer modelled projection of a riverscape. The raft rocks in time with the action and at one point seems to turn 360 degrees although this is mechanically impossible. Additional ‘realism’ is achieved by spraying the riders with water!
264 X | Media | Lab: Professional Day Conference, Friday 22 October 2004; ACMI, Federation Square, Melbourne, Australia
In these circumstances the mirror metaphor as previously constructed also seems to dissolve and we find ourselves immersed in the world inhabited by reflections that once dwelt on the other side of the clearly defined boundary of the glass. We are within the mirror land.

Yet it is a curious fact that these interactive technologies are often less immersive than their champions would allow and less interactive than older technologies such as cinema or literature.\textsuperscript{265} Certainly the new interactive mediums are more visceral but visceral experiences are less entrapped in memory than images and words. One can conjure up a painting before the eye of memory in a way that is far more immediate and palpable than recalling a bodily experience of dizziness and movement. Besides, is the screen really such a barrier, preventing interactivity? Does not your heart race when the hero has but a second to decide which wire to cut on the bomb? Or when the love crossed couple are on the verge of finally coming together? Or when the desperate victim reaches out, shrieking hopelessly for help before being swept away by the maelstrom’s fury? Be it book, cinema or painting, the barrier of the screen necessitates the viewer use their imagination in the process of viewing – an emphatic projection. Through this mechanism of projection and re-reflection external actions are thus internalized. This is far less the case in interactive, virtual realities that draw ever closer to the experience of embodied life that provides a seamless, screen-less experience. The screen is not so much a barrier, but a net that enmeshes the viewer. After all - life itself is interactive, and is hardly so memorable as art.

\textsuperscript{265} Indeed, I would suggest that although the first diagram spatially describes the current situation, a viewer’s relationship to screen based mediums is fundamentally more like that pictured in the second diagram, that of the interactive model.
Shard 6 : The Diabolic Mirror

The Diabolic Mirror Introduction

The operations and mechanism of the mirror, so neatly understood by the rational modern age, were in the past the cause of mystery, portent and wonder. The mirror’s magical powers had their positive side and the object was often evoked by various religions as a pedagogic tool, as in Buddhism or in St Paul’s famous opprobrium against simple knowledge. The mirror was also central to Egyptian mythology and is pivotal to the Japanese Shinto founding myth where the sulky sun goddess Amaterasu is lured from her cave by her own bright reflection. The mirror was not all brightness and light however, its mysteries have often been associated with darker magic. In its diabolic guise the mirror has been used in catoptromancy as a means to conjure up ghosts, visions past and visions future, most famously perhaps by the English mystic, alchemist and advisor to Queen Elizabeth I, John Dee. Mirrors are the basis of many superstitions involving luck, good and bad, that differ in detail but are common to many cultures. They are still a favourite tool of magicians and when employed in trick boxes can make people appear and disappear at will. Vampires famously cast no reflection in them – not surprisingly – anyone capable of living off the blood of others is clearly incapable of self-reflection and the empathy it evokes. Western film seems to have a fascination with the vampire figure that might befit a culture that so ruthlessly exploits those of others – do we see ourselves mirrored in this malign figure?

The diabolic aspects of the mirror are a rich vein, too broad for a full treatment here which focuses solely on that most ubiquitous and powerful of artistic mirrors of our time – cinema.

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266 Goldberg, The Mirror and Man, op cit pp26 - 36
267 Ibid. pp67-8
The modern cinema is the medium above all others that captures the mechanisms and the operations of the planar mirror most completely. Its images are similarly virtual being composed only of light and the pictorial space is ordered within a mirror-like, photographic, perspectival representation; there is a sound element that accompanies them; and they are dynamic. In movies the element of time may leap around, flash back and forth, be slowed or sped up, even reversed, but these reordered segments of time still remain as internally linear as the actual time that they record. Cinema is a medium that presents a vision that is closest to planar mirror images as they are experienced in the actual world, but can record them for later playback. In this sense it is a medium of great verisimilitude - if we take the real to be the mirror images it emulates.

The cinema is mirror-like in its pictorial structure but it is also mirror-like in presenting a diabolic vision. That is, in suggesting the vision of an alternative world latent within the mirror. Cinemas’ representations may be variously ‘realistic’ or ‘naturalistic’ but they may also have all the fantasy and phantasmagorical nature of an *Alice in Wonderland*, or even be completely abstract. Strangely perhaps, this is not often the case, at least if a discussion of cinema is circumscribed to the mainstream, dominant style of film – Hollywood narrative cinema. This cinematographic tradition is overwhelmingly realistic, narrative or character driven in approach, and proudly ‘realistic’. American art has always had a fundamental fascination with realism except perhaps, for the brief and historically aberrant period of abstract expression and minimal painting in the mid 20th century. It is thus scarcely surprising that the American cinema industry has become such a central part of American culture. In turn, as American culture and economic interests dominate world affairs, so too has this aspect of American culture become variously, and vicariously, hegemonic in other cultures.

In an era increasingly subject to the simulations spoken of in an earlier section, perhaps it is not surprising that a great number of recent Hollywood films have turned to address the diabolic aspects of mirroring, in particular, simulation and the figure of
the doppelganger. Although a list of examples and their salient features would take far too much space, movies such as *Face Off*, *The One*, *Pluto Nash*, *Predator*, *Blade Runner*, *Terminator* (One and Two), *Total Recall* and *The Matrix* series, among many others, all feature either doppelgangers of the central character; simulations of the human subject or of their environment; or alternative, ‘mirror’ dimensions. Many of these are malevolent inversions of normative situations or characters. There is a long history of the figure of the doppelganger appearing in film but it is telling that there has been such a plethora of examples in a short space of time originating from the country that is the most powerful in expanding the structures of the mirror-world spoken of above.

Interestingly these films are constructed with the extensive use of computer graphic simulations and models. Characters, sets, and effects, may all be constructed in the computer and rotoscoped into filmed action, or substitute for the filmed world altogether. In many of these films, mirrors often self-reflexively appear to subtextually underline the motif of an uncertain, doubled reality - such as in the chase scene featured in *The One* where the central character and his evil double pursue each other while being simultaneously imaged in the security mirrors and videos of a hospital corridor.

What these films seem to self-consciously reflect upon is the essential mirror-like activity of movie making. Movies are not just mirror-like in their pictorial structure but resemble them in many other ways. Actors themselves are a form of doppelganger, a person playing the part of a fictional character who resembles them but is essentially different from them. Likewise, a movie is a constructed, alternative world that

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269 Possibly the first of these is the Rye, S., *The Student of Prague (Der Student von Prag)*, Deutsche Bioscop, B., German, Feature Film, Silent, 57min, (1913),

270 So much of this now goes on that Hollywood stunt workers were threatening to go on strike and there have been various suggestions that their days are numbered. See: Sacks, E., 'Up against computerized mayhem, can the Hollywood stuntman survive?' April 19, 2005, Columbia News Service.

resembles the parallel real world that exists outside the cinema. Movie prints are faithfully mirrored copies of an original print, just as the print faithfully photographs the space filmed.

More than a simple reflection however, such movies are becoming ever more distant from the ‘reality’ they portray. Largely constructed as CG simulations, what appears on the screen breaks the indexical relationship photography has with the world of the actual. Such films are mirrors of simulations and become a form of simulation themselves. Like all simulations, they may be mistaken for the real, and thus stand as a threat, to the real itself. Hence it is not an uncommon plot device for the central characters to be disoriented, no longer certain of what is ‘real’ and what is a simulation. Their confusion echoes that of the film goer who can now no longer tell with any certainty what is a computer generated model or actual footage – except the concern of the audience seems not so sharply felt as those of the movies’ characters. These films, with their themes of an inverted reality (especially Total Recall and Matrix - where what seems real is actually a simulation and what seems false is actual) - also mirrors contemporary conditions of uncertainty where mediated sense data has infiltrated the plane of existence and is coextensive with it. When we look at video footage from distant wars, we seem to see something that once existed in some form of other, but can we really be certain of what on earth are we seeing?

Ray Two: The Self as Mirror Image

Not only do such movies structurally mirror the mirror, then, they also mirror the increasing simulation of our contemporary conditions of existence. Even more startlingly they are visions that we ourselves mirror – we mirror them just as they mirror us.

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272 See the discussion of the simulated nature of photographed virtual realities in Shard 5, Ray 9.
In Laura Mulvey’s essay ‘Visual Pleasure and Narrative Cinema’ she makes clear the mechanisms of how we may internalize the vision of figures on the screen by drawing parallels with Lacan’s notion of the mirror phase. Arrested in the physical strictures of the cinema that heighten the scopophilic experience, she argues that we experience a process akin to the mirror phase as described by Lacan. This process involves the recognition by the child of its image in the mirror, a joyous one in which its image appears as more complete than its own internal experience of its own body. In this (mis)recognition and through inverting and internalizing the vision presented, the child’s ego separation develops, as does a recognition of the existence of the Other. It is the process by which the child enters into the world of the symbolic rather than the imaginary.

In a parallel mode, Mulvey argues that the viewer recognizes in the figures on the screen someone like, but better than themselves, who they identify with as an ego substitute and take on their (his) role.

Mulvey’s argument explains much about the mechanisms of narrative film structures and their power (and the exclusion or sublimation of the female viewer’s desire.) I would go one step further however. The Lacanian moment she suggests is one that is not just re-lived as a parallel to the original moment of ego formation, but is an additional supplement to it. The internalization that occurs is not just with the heroic character portrayed on screen but with the whole mechanism of viewing. Specifically, what is internalized is the mechanisms and modes of depiction – those of the mirror itself - along with the ego subject. Indeed, this is latently suggested in Lacanian schema which can only operate if the mechanisms of representation the mirror embodies are also internalized as part of the symbolic structure. The mirror is a specific, historic development of urbanized, labour specialized societies as argued in the opening chapter, and its operations are beyond those of simple or natural reflection. Constructed as a defining part of Western civilization, it bears within it a logic far more elaborate than those of mere reflections. Crucially, Lacan’s mechanism can be adapted to explain the formation of the individual in societies with mirrors. Those without them – tribal

275 “…in the scopic field, the gaze is outside. I am looked at, that is to say, I am a picture.” Lacan, J., "What is a picture?” in: Mirzoeff, N. (Ed) The Visual Culture Reader (Routledge, London), (2000).
societies - do not develop such highly differentiated, individuated ego structures, as we have seen, but are collectivised ego formations. Their conception of self is solely bound in the eye of the Other.

The power of such films then is to reinforce not just ego formation, but the mechanisms of the mirror itself at a formative psychological level. Movies can engulf the viewer in their reality and what is real and what is not becomes blurred - a state nicely described in Gore Vidal’s autobiographic recollection of his life as intractably enmeshed in the screen of cinema.

For instance, I often believe that I served at least one term as governor of Alaska; yet written histories do not confirm this belief. No matter. Those were happy days, and who cares if they were real or not? 276

More seriously, recent neurological findings seem to suggest that the brain does not initially differentiate between actual sense data and virtual sense data, at least in the first instance. 277 In cinema many of the cues for depth perception that usually differentiate between the two are largely erased making the experience seem even more ‘real’. 278 Further, the initial visual sense data that travels to the brain is constructed from a virtual image formed on the surface of the retina that is physically equivalent in both cases. That is, sense data arising from both virtual and actual images are the same at the point of retinal reception and the differences and distinctions between the two are largely determined by collaboration with the additional input of the other senses. These additional cues can signal the difference between the palpable and the virtual but, again, many of these are erased in the case of film and may be completely subsumed in simulations and virtual reality experiences that emulate these additional cues along with those of vision.

278 All are suppressed except stereopsis and relative motion and these are partially suggested see: Livingstone, Vision and art : the biology of seeing, pp138 -141
Initial sense data is processed through the evolutionary older parts of the brain – those associated with the ‘four fs’ – fleeing, fighting, feeding and fornication. The primary site of initial processing is in the amygdala. This produces an emotive response well before any secondary, conceptual processing occurs in the higher levels of the brain and allows the viewer to tell if the vision is actual or not.\(^\text{279}\) This makes senses – a lion seemingly presented before you demands an immediate response - considering its reality or not would slow down reaction time to the level where the viewer may well become food. This initial emotive response also explains much of the power of such images and why people reportedly threw themselves from their seats in early cinematic displays of locomotives rushing toward them. Later, higher brain processes, sometimes occurring many minutes or even hours after the initial sensory input, are able to make the distinction between the virtual and the actual clear. The processes of memory too are involved so as to implement a learned response that familiarizes the viewer with the circumstances of reality and fantasy – such as knowing that when viewing a film in a cinema, the images are most likely virtual, not real. The speed of film though actually makes the intervention of higher brain processing, including memory, difficult since one has not the time for reflective pause, adding to its emotive impact and a suspension of disbelief.

In the initial perception of cinema or other virtual mediums, there is an emotive response no different from those arising from actual inputs. Add to this the effect of the mirror neurons described by Ramachandran that fire when a viewer sees an action, \textit{as if they were actually preforming it},\(^\text{280}\) and the power of filmic images is far more direct and powerful than has previously been accepted.

Add to this the sheer quantity of these productions that cover every aspect of life. In Western culture it is virtually impossible to have an experience that has not been first usurped by its representation. Thus, we have seen many thousands of deaths before we are likely to witness our first actual one. Similarly with car crashes, love


affairs, interactions in the milk bar – all the stuff of life from mundane to sublime – has been filmed and presented to us many times over. Movies fill up our lives and then we live them out. When events occur in the actual world, they often appear as shadows of preexisting realities, yet these preexisting realities are often mere representations. These templates swamp our actions and we may hear ourselves repeating dialogue from dimly remembered movies or declaring dramatic events to be ‘just like a movie’. It is a hyperreal situation so evocatively described, if overly determined, by Baudrillard.281

As the simulated images on the screen get ever closer to emulating mirror images, and as the substance of the world is recast and remodelled on the basis of mirrored computer simulations, so the cycle completes itself and the more hermetic the loop becomes. Derrida suggested that “there is nothing outside the text” but perhaps we might elaborate (given the image based nature of text) that there is nothing outside the (mirror) image.

281 Baudrillard, Selected writings, p178 -179
Concluding Shard

Introduction to Conclusion: After Reflection

The modern planar mirror is a mercurial thing, literally and metaphorically. So adaptable and flexible its rich semiotic, it can be regarded as a cipher of either objectivity or subjectivity, depending on how you look at it. As evidenced in the sections above, it is not only central to fundamental epistemological systems of the West, shaping and defining the very way we understand the world, it is also a redoubtable metaphor and mechanism in considering the formation of contemporary culture. We are trapped in its tain - it underpins our thoughts about thought, our visions of vision – we are caught in the mirror land.

How to conclude? By looking back to another mirror. Like much in the contemporary modern world, we repeat problems and mirror situations known in the past and recorded in the dusty, seemingly forgotten classics. Differences between the eras may obscure the similarities, like a dim looking glass, but they are there.

Ray One: Circular Mimesis: Ovid’s Narcissus and Echo

The story of Narcissus is also the story of Echo, the two are indelibly entwined by a series of complimentary doublings, inversions and mirrorings which emerge beneath the tale’s predominant themes. The oldest known version of the myth is found in Ovid’s *Metamorphoses* but there are countless examples of literary and visual permutations. The Narcissus myth has been variously interpreted, most usually as a moral tale about vanity, melancholic rumination, the dangers of self love. Yet more than this, there is a strong sub-text running through the narrative which arises from the central role of the mirror. This tain laying beneath the glassy surface of the plot reflects on the nature of the mirror itself and plays with dualities, doublings and problems of signification.

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282 Among many others Carravagio, Gordon Bennett, Arthur Boyd, Peter Porter.
Ovid recounts that Narcissus was a boy of great beauty born from the nymph Cephisus following her ravishment by the river nymph Liriope. By the age of 16 Narcissus was lusted after by all who saw him but his “unyielding pride” meant he would give himself to no one. Particularly smitten was the nymph Echo. Echo had already been subject of the gods’ wrath, a chattering soul, she would knowingly detain Juno with her banter while Jupiter conducted secret liaisons with other nymphs. When Juno realized this deliberate stratagem, she cursed Echo to an abbreviated use of her voice – condemned to merely repeat the last words or sounds spoken to her. Laying eyes on Narcissus, Echo falls in love. Secretly she followed him but so cursed, was unable to declare her love. One day while hunting Narcissus finds himself separated from his companions and calls out “Is there anybody here?” “Here” answers Echo. A confused parody of dialogue follows (“Come here, let us meet!” “Let us meet!”) until Echo emerges from the foliage to embrace her love. Narcissus is horrified and flees declaring he would fain die rather than love her. Echo, broken hearted, hides herself and literally wastes away for love. A disembodied voice, she can still be found haunting her refuge of caves and mountain clefts.

Another of Narcissus’ spurned suitors prays to heaven in frustration:

May he himself fall in love with another, as we have done with him! May he too be unable to gain his loved one?

Nemesis grants the prayer.

Narcissus, wearied by a hunt, lays down to drink at a pool and there encounters his reflection for the first time. It is love at first sight. This other proves elusive, rippling away whenever the boy attempts to touch the object of desire. At first

He fell in love with an insubstantial hope, mistaking a mere shadow for a real body……. He did not know what he was looking at, but was fired by the sight, and excited by the very illusion that deceived his eyes.

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Later he comes to realize that it is himself that he loves but cannot possess.

Alas! I am myself the boy I see. I know it: my own reflection does not deceive me. I am on fire with love for my own self. It is I who kindle the flame which I must endure. What should I do?…How I wish I could separate myself from my body!285

His pitiful sighs and farewells to his reflection are echoed by Echo and give voice to his fading image - exhausted by love he dies. When the mourning forest sprites come to inter him, his body cannot be found, replaced by “flowers with a circle of white petals round a yellow centre.”286

Like the rest of Ovid’s epic poem, this tale primarily focuses on the theme of metamorphosis – accordingly, Narcissus becomes a flower, Echo changes into the phenomenon that bears her name. At a prosaic level the myth provides a basis to explain two natural phenomenon that puzzled to the ancients - the seeming spontaneous generation of the daffodil and the strange aural effect of the echo. Interestingly, both these phenomenon seem to spring forth from nothing. Nothingness itself is a theme in this tale, indeed, prior to their final metamorphous, the two central characters undergo a initial transformation – they waste away and are dissolved into nothingness.287 Such dual symmetries abound throughout the narrative. These symmetries take many forms – parallels, complementaries, inversions, oppositional dualities - but most often they take the form of simple doublings. That is, a simple mimetic reflection such as is found in a mirror image. The mirror, and the process of signification itself – the real becoming a representation - is threaded through the narrative and emerges through other, more self-evident themes.

The two central characters often find various reflections of the one in the other - in love for instance. Love is an overt theme – it is the very engine that drives the

284 Ibid.p85
285 Ibid.p86
286 Ibid.p87 This is a variety of daffodil – whose genus is Narcissus
287 An additional effect was the prophet Tiresias was also transformed in this account from a suspect prophet into the legendary seer when his prediction that Narcissus would grow to a ripe old age “if he does not come to know himself” was recognized as having come to pass. Ibid. p83.
metamorphoses – and both characters fall under its spell. Echo falls in love with Narcissus, Narcissus falls in love with himself. In both instances this love is spurned – in Echo’s case actively, in Narcissus’ passively. Both share, moreover, the same form of love – love for an unattainable Other. This is a particular form of love - thwarted, unattainable love. Narcissus can never embrace his love, nor Echo hers. It is a love that has a withering effect, sickening the soul and wasting the body. 

This is a narrative of implied morality and evident retribution and in this also, the two characters share a symmetry of god ordained punishments. Echo is punished for her duplicity in distracting Juno during Jupiter’s flings, Narcissus is condemned for his pride. Notably, these are sins of falsity, of being two faced – lying in Echo’s case, exalting one’s opinion of oneself above reality in Narcissus’.

In this narrative the mirror is mimetic, its dual symmetries operate through a process of reflection. This is reflection in a very limited sense however. Having entered from the lexicon of vision to the world of thought, the notion of reflection implies a cognitive self reflexivity or thought and implies self awareness. This is in keeping with the general discourse surrounding mirrors, often credited as the harbinger of self knowledge. Socrates was said to hold up a mirror to drunks in order that they might see that their blighted reason found a reflection in the sozzled distortions of their face. Lacan posits the mirror as the very pivot of individuation. Conversely through this account, the mirror operates inversely, hindering any developmental self knowledge or self determination. Although Narcissus becomes aware that the image is himself, he never clearly understands that this figment is indeed an image. “He fell in love with an insubstantial hope, mistaking a mere shadow for a real body.” The mirror in this tale is uninformative, it merely repeats rather than leading to greater knowledge or awareness. Indeed, for both figures, the mirror is the cause of self annulment.


290 Ovid, Metamorphoses, p85
To explain this point, there are two further and more central aspects of mirroring that have not been mentioned but which are pivotal to the narrative. These are the two actual mirrors of the narrative. The first is a visual mirror, the languid pool of the forest in which Narcissus sees himself reflected. The second is an aural mirror, the transformed nymph Echo, who mirrors sounds - the words of others. In both these cases, the mirror is an object capable of causing metamorphosis. In both cases it diminishes and destroys the real bodies of Narcissus and Echo.

In the first instance we have the mirror engendering a process of visual representation – the object Narcissus becomes mimetically abstracted as an image. His image thereby enters the less substantial world of signs but this is a closed, hermetic semiosis, one that simply rebounds upon itself. In the second case, Echo repeats words, her repeated words and phrases are reflections of signs themselves. In her utterances, signs reflect signs. The ‘conversation’ she has with Narcissus is illusory, she has no means to express her will, she is not using signs to communicate, but rather, in their simple mirror repetition, they annihilate the significance of words as a tool to transport meaning, becoming instead just hollow signifiers. Like Narcissus, this too results in her body evaporating to nothingness.

In this tale then, signs, both in the form of spoken words and as visual images, lose their capacity to carry information or to truly signify. In their mimesis they fail to become fully signs. They become simple repetitions leading not to knowledge or communication but to a wasting self-referentiality, a circular and hermetic doubling that repeats but cannot move forward. Narcissus is trapped in the speculum’s repetition, Echo is left mute while ironically able to speak. Language and image serve only to ensnare their users in a vicious circle – a circle, that will be traced out in various ciphers of nullity - the dissolution of their very bodies, the roundness of Narcissus’ pool, and in the last letter of Echo’s name, the zero, the ‘0’.

291 Stoichita, Self-Aware, p184
Yet at the very point of their vanishing new, unexpected things come into being. The beauty of Narcissus is re-embodied in a flower, Echo’s voice remains as a haunting natural phenomenon. If signification is denied, there at least seems the redemptive possibility of transformation, a melancholic beauty. Perhaps here too lies one explanation for the attractiveness of the theme for so many dour poets and artists through the ages. Those who sense the vanity of their crafts and realize the futility of signs to fully communicate, but nonetheless, recognize the possibility of engendering some transcendent, unimagined, other, form of signification.

The story of Narcissus is often interpreted as a myth of vanity but it is only after some time that Narcissus realizes the image he admires is himself. Can one be vain when one mistakes the image in the mirror for someone else? Even after he becomes aware that it is indeed his own form that he has fallen in love with, he fails to fully understand the true nature of an image – that it is a simulacrum lacking the materiality of the object. Narcissus’s tragedy is precisely this failure to distinguish between the image and the real world – to mistake the sign for the real.

On the other hand, Echo who knows the difference between signs and their referent, is trapped in a world of insubstantial communication and is powerless to form a meaningful link between the two. She can only mimic words as hollow sounds, ciphers drained of the power of communication, noises thrown back as a mockery of conversation to the animating presence of the speaker. In this tale the mirror is a trap where representation becomes empty.

Is not Narcissus’ failing one typical of our age where “all that was lived directly has moved into representation”\textsuperscript{292} A time where the ubiquity and number of images, signs, signifiers saturate our experiences. Where dramatic events are most often described as being “just like a movie”. Where “We seek moments or events that are

\textsuperscript{292} Debord, \textit{The Society of the Spectacle}, , p1.
‘picture perfect’, and judge the world for its fitness as an image”293 A heady, infatuating era of shiny surfaces of glass, and chrome, and plastics, that reflect our images back to us, in malls, in the street, on the screen. An era where culture is confused with nature. Where the image supplants reality, or rather, where the image has become so much a part of the real world that materiality blurs. Like Narcissus do we not confuse the sign and the image? Perhaps this is a culture of Narcissus – vain, certainly, mistaking images for the real – Narcissistic - and like Narcissus, one that cannot tear its gaze away, from looking on at the dizzying spectacle of its own demise with an exhausted longing. More, it is an era where the very link between sign and its referent has become hopelessly confused. Where there is no certainty that when we look out to the world we see anything other than our own sign systems, anthropomorphically projected onto the world, reflected back at us.

Or perhaps now is a time more suited to Echo – where we are condemned to merely repeat, trapped in a circular self referentiality of empty signs. Where fashions revive fashions; where art hollowly and unknowingly repeats styles from the past; where movies are remade as sequels, series, prequels(!) and then become T-shirts, pinball machines, video games, baseball caps, books, comic strips, trading cards, toys and tasty snacks in a frenzy of echoed cross marketing. An era where language itself is often seen as a system that reflects only language. Where signification seems oddly hollowed out. And where there is a failure to transform, merely to terminally repeat. In the 1990s it seemed to be the end of the mirror paradigm and yet the West seems to have stalled and gone back to the previous, virtually pre-modern, paradigm. The mirror continues – discredited perhaps, but seemingly without alternative.

In fact, our era mirrors both these states in the same way that Echo and Narcissus are ultimately parallel reflections of each other. This is an era of mirrors, where the difference between the image and the real, the signifier and the signified have become unsteady, uncertain. Even if this mirror state is still not complete, this is an era alive to the tale of the Narcissus/Echo mirror.

For nothing in this world exists absolutely, the opposite of every reality is also real and true. Everything is expressed in extremes opposed to other extremes, and it is only by this paradoxical pairing of opposites that meaningful statement is possible. This paradoxical approach does not signify, however, that each statement is the retraction of the last, but that truth inherently has two sides, that reality is Janus-faced, and that adherence to truth and reality involves the avoidance of all over-simplification and comprehending things in their complexity.294

If we cannot bypass the mirror, get to a point somehow after reflection, rather than attempting to analyse it away, as was the tactic of some postmodernists and post-structuralists, perhaps the tactic may be to break it within its own structure. To take the curse of Echo and simply amplify it until its circular resonances shatter the glass. To stare into the mirror until delirious visions arise from its surface, no longer reflections but images with their own life. To turn the mirror against itself in a visual ‘reductio ad absurdum’ gesture. To shift from an Apollonian analytic planar mirror to a Dionysian frenzy of repetition configured as a mirror-ball – an end to reason – at least as it is currently configured. I conclude it is already happening. As evidence, these theoretical conclusions are visually manifest in the exhibited works.

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294 Hauser, Mannerism: the crisis of the Renaissance and the origin of modern art, p13
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Appendices

Colour Plates

Appendix I
Appendix II
Appendix IV
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