

Reclaiming uncertainty with para-rational methods

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Abstract

This paper is the theoretical complement to the practical component of a larger body of research on the role of prediction. The overarching objective is to question discourse regimes and how they shape reality through the management and construction of acceptable knowledge. Para-rationalism is explored as a method to simultaneously problematise and straddle the rational/irrational dichotomy. Divination can be seen as an example of para-rationalism and is addressed through the notions of paradox, synchronicity, truth as a model and self-fulfilling prophecies. In modern secular society, the legacy of divination can be traced in the contemporary use of predictive algorithms, seizing on their utility for surveillance and market driven incentives in the name of progress.

Introduction

As a way to question and derail Western philosophies tradition of materialist explanation of the consciousness/mind, Edward A. Shanken's notion of a para-rational model describes complementary modes of inquiry. It is one that includes both the rational and the irrational in forming a cohesive and self-reflexive application to alternative ways of knowing, and goes beyond the hegemonic scientific rational discourse (Shanken, 2010, p.29). The divination paradigm is one such example that actively and equally involves both reason and intuition to deal with uncertainty and unforeseen future events. These practices have been employed throughout human history as a means of spiritual and temporal guidance and knowledge making. From these beliefs the universe was codified with meaning and knowledge that informed subjectivity and objectivity. The weather as the ultimate spirit of uncertainty and chaos is perhaps the first earthly manifestation of irrationality and consequently, a fundamental force to be reckoned with. Ironically, the only predictable thing you can say about the weather is that it is unpredictable. Divination's paradoxical basis in addressing the irrational with irrational means, reclaims uncertainty from the fear of incompleteness and contradiction to the space of open-ended future possibilities. The construction of acceptable, official knowledge is underpinned by various social and economic imperatives which are led by political agenda, while esoteric forms of understanding are banished underground, regarded as superstitious, ignorant and irrational. Similarly, knowledge produced through discourse is implicated by history, concepts of truth, and representation – in other words, knowledge is only meaningful within a specific historical context (Foucault cited by Hall, 1997, p.46). The esoteric terminology of specific techniques, for example, scrying, geomancy, aeromancy, horary and genethliacal astrology are however, deemed in the modern era 'superstitious'. This derogatory term came to mean 'misplaced assumptions about causality stemming from a faulty understanding of nature' since the late 18th century when rationalism became the governing hegemony (Perkins, 2001, p.5). Modern day scientific predictive methods such as weather forecasting can be seen as an extension of the 19th century's doctrine of progress, an advance that was dependent on a need to conceptualise and generalise a particular rational understanding of the future. Katherine Hayles also maintains that, "visions of the future, especially in technologically advanced eras, can dramatically affect present developments" (quoted in Hollinger, 2006, p.452). Certified predictions today seem just as present and important, however it has become more about eliminating risk, efficient time management and planning. Algorithms are employed to predict events that can be pre-empted and incorporated even before it happens. What are the consequences of the regime of rationalisation? To what degree has the obsession with calculated precision excluded other alternative possibilities of the future? In the realm of future studies, this trajectory is better known as the 'colonisation of the future' (Perkins, 2001, p.6).

In the beginning there was chaos

Port	Barometer	Wind	Remarks
Portland	30.00		
Plymouth	29.94		
Penzance	29.99		
Copenhagen	30.09		
Helder	30.13		
Brest	30.13		
Bayonne	30.13		
Lisbon	30.13		

General weather probable during next 12 hours:
North—Moderate westerly wind; fine.
West—Moderate south-westerly; fine.
South—Fresh westerly; fine.

Barometer, corrected and reduced to sea level, each 10° above...

Fitzroy's first ever weather forecast published in the Times newspaper, London, August 1861:

North—Moderate westerly wind; fine.

West—Moderate south-westerly; fine.

South—Fresh westerly; fine.

In 1865, Robert Fitzroy, the first head of the new governmental department of meteorology in England committed suicide on account of depression caused by inaccurate weather predictions. Fitzroy, most notably recognised as the captain of HMS Beagle during Charles Darwin's voyage, also invented new barometers and introduced synoptic maps based on the telegraphic collection of data from widespread areas which allowed him to pioneer the new science of meteorology and organise Britain's first official weather service. On 1st August 1861 the Times newspaper published Fitzroy's first ever weather 'forecast' which miraculously had a 100% success rate. This was to remain, however, a one-hit-wonder. Unfortunately the following predictions proved to be disastrously wrong and consequently suffered parliamentary criticism and journalistic scorn which would eventually cause Fitzroy to end his life. Perhaps Fitzroy's fatal mistake was to underestimate the extreme volatility of public judgement in as much as the weather. As a new science, departing from non-scientific methods of 'astro-meteorology', the meteorology department became highly sensitive to using terms such as 'prognosticate', 'prophecy', and even 'forecast' to avoid any associations with the more 'dubious' kinds of prediction made by astrologers that assessed lunar and planetary influences. Set against the backdrop of a time when acceptable knowledge was beginnings to be dictated by doctrines of progress that propounded scientific rationalism and applications of useful statistics, Fitzroy advanced to cross the dividing-line between superstition and rationality (Perkins, 1996, p.222).

At first glance, this event underlines the pangs of societal intolerance of 'wrong' knowledge and suspicion of deviations from 'right' knowledge. However, at its heart, this story re-tells a timeless tale of people grappling with the sublime uncertainty of the environment. In public parlance, uncertainty is a negative thing, implying a lack of rigour and predictability. In many fields of science today, particularly in meteorology, uncertainty is

something that is to be contained and controlled. The weather, at foremost, is a primordial force that underpins the struggle to come to terms with the chaos of world manifested originally in its natural phenomena. Its infinitely unpredictable behaviour once embodied God and has remained the informal archetypal symbol of chaos. This mythical association reveals the attribution of weather to divine order perhaps because of the sheer lack of order or structured pattern – a phenomenon so untouchable and incomprehensibly beyond human range that it was appointed to the realm of the heavens. Our relationship with the omnipresence of weather is one that has moved from full of awe to an antagonistic dynamic. In spite of that, it's one that's so deeply and unconsciously ingrained in our imagination, psyche, and body, gradually stretching out into collective complex and abstract bodies of constructed systems. In simple terms, one can say that the ambition of Fitzroy is one of many attempts in history to make order from chaos by aspiring to rationalise a universe that is fundamentally unpredictable. Many have died or lost their sanity trying to uncover a hidden code of absolute truth and meaning. Like many before and after him, the legacy of Fitzroy's desperate act reveals both fears of irrational thinking associated with superstition and frustrations with human limitations to deal with the inherently ungraspable.

In an attempt to understand the underlying order of the weather in the early 1960s, the meteorologist Edward Lorenz came to identify chaotic events in the atmosphere arising as a consequence of attempting to model systems mathematically. Chaos theory, as it was to be called, focused on chaos concepts to refine matters of structure, prediction and control, and has been further theorised in fields such as, sociology, economics and philosophy. Some examples of chaotic dynamic systems are the weather, the stock market, economies and human behaviour, all of which have deterministic qualities that are nevertheless vastly unpredictable due to the extreme sensitive initial conditions that give rise to unexpectedly large results.

Throughout history, the weather has also been harnessed for both hostile and utopian means and it undoubtably shapes us and, despite contentious political debate, we also shape it. Lucian Boia highlights the historical relationships to climate as once being the arsenal of the forces of divine justice and how it was demoted, as a result of The Enlightenment, to “natural phenomena” (Boia, 2005, p.12). The contradictory periods of 18th and 19th century saw on the one hand, strong sentiments towards the notions of progress advanced through science, which was embodied by growing industrialism, and on the other, the rejection of the rationalisation of nature which was evoked by the spiritual and emotional sensibilities of Romanticism. The sublime, the aesthetic mode explored by Romantic artists and scholars, saw the forces of nature as representing fear, uncertainty and doubt, however in the 19th century this idea of the sublime threatening mankind detaches from nature to become culture. The beginnings of meteorology was a fundamentally scientific attempt to separate the natural from the realm of the supernatural, to bring it into the light of the observable and thus knowable. Prediction in this new scientific light was the attempt to eradicate irrationality and chance as a means to tame it.

Divination, as one of the earliest practices dealing with uncertainty, explores the uncharted in order to seek answers to questions beyond the range of ordinary human understanding. These practices are as universal as the weather itself, playing a catalytic role for example in war and revolution around the classical and ancient world. Concurrently, it had an indispensable function in all aspects of daily life from political decision making, healing of illnesses, determining the times and modes of religious worship to making choices for personal inquiry. Divination's equal and unifying inclusivity of complementary modes of cognition, can be described as para-rational as it

traverses through various facets of consciousness in its far-reaching methods of inquiry. Despite Divination's fluid paradigm and modern prediction's divisive paradigm, they share the practice of meaning construction from a chaotic pattern. However, during a divination varying mental processes such as *presentational* – primary process using intuitive techniques, and the *representational* – secondary process of thinking such as inductive techniques, and interpretative narrative techniques are used. The simultaneous recognition of these modes in the process of knowledge making have been exercised by diviners in their native language when elicited to form a theory of divination (Tedlock, 2001, p.193). Empirical evidence and rational induction is as significant in representational symbolism as the meaning grasped from emotion and intuition in presentational symbolism. During a divination, the diviners individual creativity constructs usable knowledge from oracular messages by self reflexively connecting these fields; inductive reality embodies the emotional experience allowing for interpretation and implementation. What we have here is a continuum of rational and non-rational mental processes and behaviour, ultimately a larger scope of ways to arrive at forming knowledge.

Separating modes of inquiry

To understand the changing perspective on external and internal modes of inquiry in the West, one must consider the history of the English word 'divination' of Latin origin *divinus* meaning *divine*, as an improvement on the original Greek word *mantic*, meaning madness, raving, insanity or inspiration. In contrast, *oionistic*, another Greek term referred to the inductive art of the uninspired and sane who inquire purely from human reasoning. Plato concludes that "both in name and in fact, madness is nobler than sanity [for] the first proceeds from a god, the other from mere men" (Helmbold and Rabinowitz quoted in Tedlock, 2001, p.g 190). Later in the 19th century, at a time when scientific rational knowledge established authority, the perception towards reason and intuition becomes inverted. What was once seen as dull and an uninspired way of arriving at a conclusion came to be understood as acceptable knowledge guided by reason, while intuitive forms became ungodly and heathenish.

In relation to conspiracy theories, Florian Cramer describes the invisible and hidden countercultural undercurrents which contradict official history as 'esoteric' in contrast to 'exoteric' as the visible and official acceptable knowledge. In much the same way that conspiracy theories can be perceived as an esoteric undercurrent having the potentiality to hack our understanding of truth because they construct alternative realities and disrupt common sense truth, the divination paradigm too offers a space to contemplate upon causal factors that so do subscribe to a scientific paradigm. Similarly, statistical narratives which pervade scientific inquiry can be considered exoteric, in as much as an exclusive bias towards reason and rational logic. Thus underground esoteric narratives such as conspiracy theories or divination practices, "could in the very best cases, be practical and philosophical or epistemological critiques" (Cramer, 2006). However Cramer simultaneously warns of the dangers when it turns into official politics, for example, 'The Protocols of the Elders of Zion' being disseminated by the Third Reich of Germany where such a fabrication fuelled by paranoia, grows into an overground belief system. Another example of extreme irrational thinking is the mass hysteria surrounding the witch-hunts in Europe and America between the 15th and 18th centuries in its systematic execution of those – mostly women – suspected of practicing witch-

craft. In both cases, the paranoia unleashed from the frenzy of fear lead to a kind of rogue and menacing chaos, one that was excessive and yet tolerated during its time. Let's consider Cramer's definition of paranoia in this context as the only form of irrationality that is perfectly rational, if not overly rational (Cramer, 2006). It is precisely this determination to rationalise everything it cannot, forcing it to fit within a framework of logical methods, that it becomes irrational, eventually becoming paranoid or literally speaking, beside one's mind. This model of truth seeks to rationalise unexplainable phenomena insofar as it's observable and measurable, however ignores the irrational because it can not deal with it, for example anomalous phenomena such as Psi. The mechanism of probability in mathematics also reflects this inability to deal with the irrationality of single random events or individual qualities. The German mathematician, Hermann Weyl, once said "ignore the single integer" regarding precisely this unpredictable individual as an "aspect of something abysmal which we cannot grasp" (quoted in Von Franz, 1980, p.17). Thus scientists need to project single units through a specific procedure onto the background of the possible to cope with them. The secret in probability is repetition; the more repeats, the more accurate the probability. They ignore the individual and simply deal with it as a class, a group. This powerful mathematical tool is nonetheless, only a mental artefact. For example, the concept of an average is only an abstraction existing in our minds. It doesn't actually exist because the accumulation of people is actually a sum of unique cases. It is this inability to deal with simultaneous realities, the discrepancy between the individual and the group in science that generates a paradox.



Religious, mystic and alchemical iconography depicting notions of infinity and eternity from different cultures.

Belonging in the abstract realm of omnipotence, omniscience and the like, the notion of infinity is what the father of cybernetic, Norbert Wiener calls an *indeterminate form*; something that doesn't conform to the ordinary conditions of a number or quantity (Wiener, 1964, p.7). It is this indeterminacy, an abstraction of the unlimited, against something that is determinable— the span of human limits, that provokes Wiener to ask the paradox of this question: “[c]an God make a stone so heavy that He cannot lift it?” (Wiener, 1964, p.6). The inconsistency of subjective experience vs. the physical world is the elastic twilight zone that has inspired generations of scientists, philosophers, diviners and religions in each of their endeavours to solve the greater meaning of life. In the same vein that Wiener talks about the paradoxes that centre around the notion of infinity, Marie-Luise Von Franz goes

further to say that even 'ordinary' numbers also have an element of indeterminacy. Once a student of Carl Gustav Jung, Von Franz argues that the reason why mathematician Weyl struggled to grapple with such a paradox was to erroneously think that whole natural integers (numbers) are a mere rational and transparent invention. From a psychoanalytical perspective, Jung has said that 'numbers' are the most primitive expression of the spirit and thus irrational. Von Franz suggests that numbers are possibly from the unconscious, a place that is autonomous:

"[...] numbers are entities which the human mind can posit and manipulate, [...] but we manipulate only the derivative; the original thing which inspired one to make counting sticks, and so arrive at the number of horses, for instance, that idea one has not got hold of, it is still autonomous, it still belongs to the creative spirit of the unconscious, so to speak (Von Franz, 1980, p.23)."

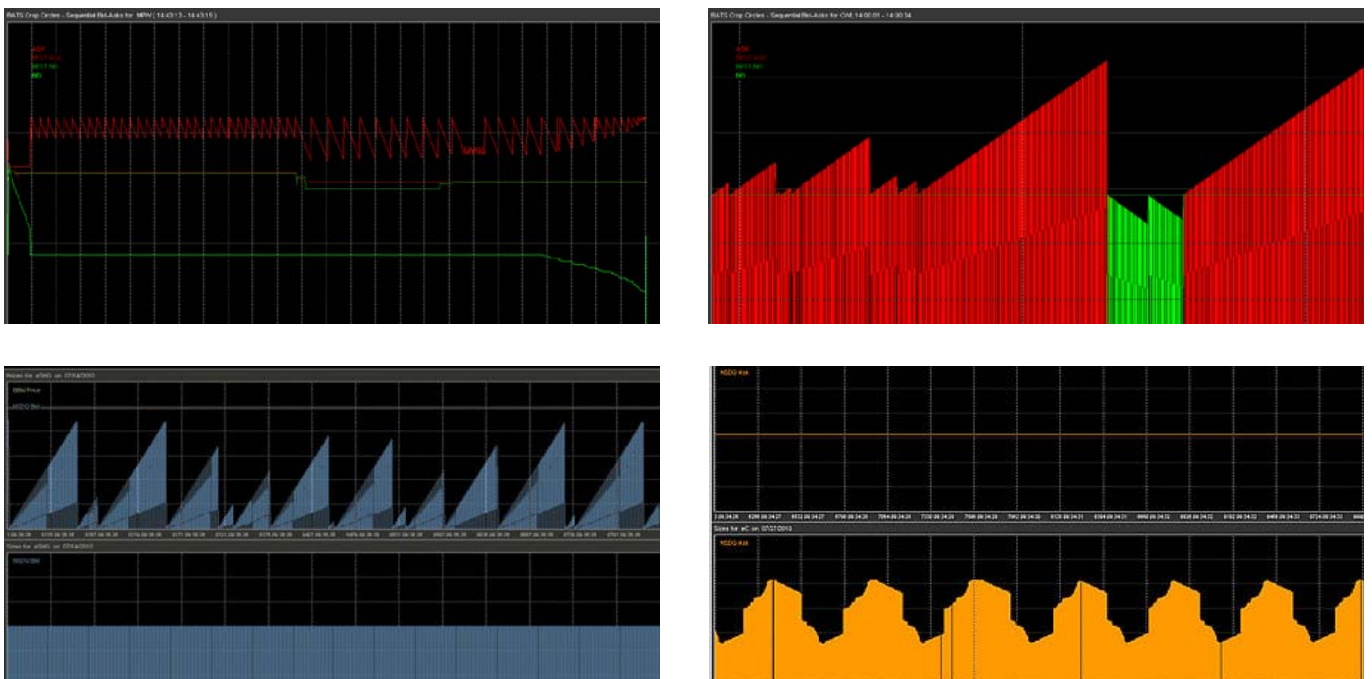
In the same manner as a mathematical tool is constructed to create and observe patterns, other abstract mental devices also necessarily need to separate out irrational factors to simplify and make conceptually manageable structures for the ease of practical implementation. Lucian Boia tries to emphasise that we are tempted to confuse 'existing reality' with the 'virtual reality' of (scientific) models, as they are "...simplified, coherent and synthetic versions of a certain dimension of reality or determined process. They are extremely useful as long as we remember that they are not the real thing: they are methodological fictions" (Boia, 2005, p.177). Counting aids such as pebbles, stones, sticks, etc. were a way for human consciousness to get a hold of number – a system to investigate reality, but the paradox is that by doing so, we selectively turn our backs on what falls outside of it. Altogether, the disembodiment of rationalism is alarming not only because it creates illusionary divisions but because it proclaims factual superiority over other less observable ways of inquiry. In actuality, the scientific paradigm is perhaps even more irrational as it dismisses the individual subjectivities, moreover the discipline of science is eternally entangled in politics, personal desires, motivations and compromised by industry demands. Science's over rationalisation as well as the extreme irrationality during the witch-hunts are both paranoiac in nature, precisely because of a thinking that excludes the other.

Blind spots of rationalism

Despite the conscious efforts of mental devices, it has been said that the human brain is in itself 'hard-wired' for pattern recognition, a reality producing engine with an internal built-in function to systematise the disorder of the outside world. This seemingly prosaic reason nonetheless, offers some insight to why prediction is so intrinsically embedded in the negotiations between subject and object. *Pareidolia*, a psychological phenomenon belonging to a larger family called *Apophenia*, is used to describe the fanciful perception or 'misperception' of a pattern or meaning in something that is actually arbitrary in patients of certain mental illnesses. It's responsible for experiences ranging from seeing bulls and virgins in the constellations of stars, the construction of conspiracy theories, to the vernacular and yet mythical constructions such as 'nephelococcygia' – the practice of seeing shapes in clouds. It is not however just confined to such a group, it affects everyone;

“a superstitious athlete sees a connection between victory and a pair of socks, a parent refuses to vaccinate her child because of a perceived causal connection between inoculation and disease, a scientist sees hypothesis-confirming results in random noise, and thousands of people believe the random ‘shuffle’ function on their music software is broken because they mistake spurious coincidence for meaningful connection”. (Pizarro, 2011)

Arbitrary patterns are rendered meaningful due to human decision to favour one over the other. This tendency is becoming more frequent as ever-increasing illegible algorithms pervade in the paranoid world of stock market predictions.



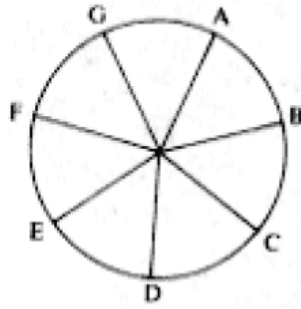
Plotted algorithms from the “Flash Crash”. From left to right: The Knife, Mountain Range, Blue Bandsaw, Tesla’s Cathedral

In the recent ‘Flash Crash’ of 2010, enigmatic algorithms were discovered and plotted in the aftermath and christened with names such as ‘The Knife’, ‘Mountain Range’ and ‘Tesla’s Cathedral’, a familiar practice that has been with humans since astrological narratives were told. Self-evidently, the media nicknamed this case ‘Crop circles in Cyberspace’. One can come to think of pareidolia or cognitive blind spots as a synonym of imagination, the act of imagining beyond what is objectively there, or as children say, to ‘make believe’. Perception is thus an active process filtered by a projection of the viewers intentions, desires and anxieties. More precisely, “seeing is constructed belief”(Marsching, 2003, p.62). It is exactly this unstable nature of perception that makes seeing the most suspect of the sensory apparatuses, and why we have culturally relegated the phrase ‘seeing things’ as irrational. From a neuroscientific view, this default pattern-making mechanisms is regarded as a defect, a betrayal by our own overexcited perception. While this view is relevant insofar to guard against blind faith and unquestionable dogma,

it need not be considered inherently dangerous per se. Imagination can be understood as a fundamental device to cope with mental gaps when the brain attempts to make sense of incoming signals and use them to guide perception, thought, and action. Following this line of thought, imagination can be thus regarded as a cognitive way of projecting possibilities, of prediction. Indeed, the imagination has played a productive role in epistemological endeavours *including* science. Thomas Watson's vision of the mysterious fluid of electricity as a paranormal force manifested itself into telephonic existence. The less known story of the birth of the telephone, as it seems was conceived as a mystical medium to connect with unknown territories beyond rational life. Since the 17th century the electromagnetic imaginary has flowed into the realm of religion, medicine, technology and many scientific men intertwined mystical and spiritualist imaginations with rational science. Kluitenberg holds that though Edison's attraction to the occult and supernatural lasted through his life (Kluitenberg, 2006, p.167), it wasn't until the end of his life, when confronted with the idea of death, that he started working on 'psychic telephones' – communication devices supposedly allowing contact with the dead. Where science fails to explain the unknown, the creative imagination bridges the gaps of the mysterious and in some instances have even accelerated the development of scientific theory. However that said, it is still on a whole rejected as an unstable faculty that should be divorced from objectivity. It is this strong dichotomy between materialism and idealism in Western epistemology that has created binary oppositions, rather than seeing them as having contextual relevance; what may be dangerous in this situation, may not be always dangerous. Additionally, this split has fostered a disregard of the study of what Pierre Bourdieu called the practical mastery or practical knowledge and precludes altogether the development of a theory of practice (Tedlock, 2001, p.195).

A self-referential contradiction that exposes the fringes of formal logic in its absurdity can also be seen as another example of a conceptual blind spot that all too well reminds us of our limited knowledge. This is perhaps the reason why we can't accept this perceived failure when it comes to understanding strange loops such as our own consciousness. Kurt Gödel's incomplete theorem used numbers to reason about the nature of mathematics and revealed instead the limits and blind spots of formal systems; a paradoxical inconsistent world in which the irrational elements could not be eliminated. Therefore it might be perplexing to think of paradoxes as a useful device, however if we give it some consideration it might just make more sense. In a not too far parallel universe, these irrational elements, are what precisely makes it a good tool with which to grasp something irrational. This is the very basis of divination; using *irrational* means to get hold of something *irrational*, while the basis of modern science uses *rational* means to get a hold of something *irrational*. Von Franz, explains that almost all non-number divination techniques operate on some kind of chaotic pattern, which actually is exactly like the modern day Rorschach test. She goes on to say, "one stares at a chaotic pattern and then gets a fantasy, and the complete disorder in the pattern confuses one's conscious mind." (von Franz, 1980, p.39) Just as the Rorschach test are based on random images that conjure up unconscious associations, for Von Franz, the function of the randomness is actually to block out conscious thoughts so as to be able to reach the unconscious. The unconscious is described as a spontaneous, creative and autonomous spirit that knows things about past and future, and things about other people.

The divination paradigm also offers flickering glimpses to contemplate the synchronistic phenomena of meaningful chance gatherings of events that are not causally related. Synchronistic thinking as the "acausal complement



Field of time (time-bound ensemble of events)

to causality, a system of explanation equal to causality but differing from it in its understanding of time and space as elastic with regard to the psyche” (Shanken, 2010, p.32), transcends the space-time and physis-psyche divide of causality, and of rational inconsistency. Divination, according to Jung, is based on synchronicity. Unlike causal thinking that separates psychic events from physical events – only noticing how physical events produce, or have a causal effect upon each other and on psychological events – synchronistic thinking, or the classic way of thinking in China, is *thinking in fields*, and makes no difference between psychological and physical facts.

Politics of Rationalism

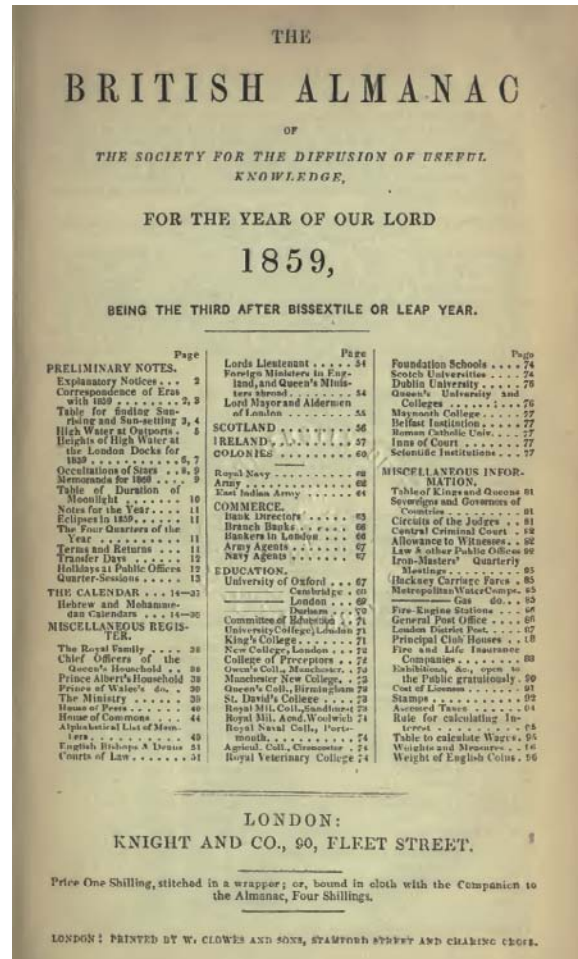
Foucault described discourse as production of knowledge in relation to power; that which constructs the topic. By defining and producing the objects of our knowledge, it also regulates its meaning and the consequent conduct of others. Just as it governs certain acceptable forms of truth, it also defines limitations and restricts the construction of knowledge itself – of how reality is perceived and produced. Discourse as the production of knowledge is also implicated by history; concepts of truth, representation and knowledge, are only meaningful within a specific historical context (Hall, 1997, p.46). Thomas S. Kuhn’s notion of ‘paradigm shifts’ argues that the model of scientific truth, at any given moment, cannot be established solely by objective criteria but is defined by a consensus of a scientific community and thus subject to the overthrowing of new ideas, of scientific revolutions. From a theoretical point of view, one can say that there is a strong affinity between the para-rational model of divination and postmodern understanding of reality as consisting of multiple truths. ‘Truth as a model’ can be a helpful notion to unveil the various ideological, economic, social mechanisms and discursive formations at work in the production of knowledge, and at the same time, remind us of the impossibility to fully grasp absolute truth. Inversely this can be arguably problematic insofar that ‘truth’ becomes a mere rhetorical device competing by measure of persuasiveness. But yet again, the value in the notion of ‘truth as a model’ lies in the very possibility to move away from our preoccupation with what Bruno Latour has recognised as “matters of fact” to “matters of concern” (Latour, 2004). He pleads to shift from an object orientated view to an orientation towards what issues are at stake, as an approach that takes on an ethnical and more sincere stance in critical inquiry. Thus it should be our concern to keep in mind that every knowledge, even the most solid, carries a margin of uncertainty.

In her book, 'Visions of the Future. Almanacs, Time and Cultural Change, 1775-1870. 1996', Maureen Perkins traces the history of almanacs as a battleground that reflected the way in which social reformers helped to construct a discourse of acceptable knowledge in the formation of cultural capital by banishing the prolific popular culture of prediction, prophesy and astrology into the lowest ranks of literature. As a follow up, her next book, 'Reform of Time. Magic and Modernity. 2001', Perkins main thesis is that the 19th century marginalisation and reform of 'superstition' as belief system was a part of a social history of time management. Throughout these two books, she reveals how definitions of acceptable knowledge were restructured according to hegemonic ideas of progress in 19th century Britain. These historical examples demonstrates Foucault's notion of discourse as producing knowledge and power. Furthermore it serves to put into practical terms, how the discursive formation, as a common institutional, administrative or political drift and pattern, constructs value and in turn produces reality.

In the late eighteenth century the term 'superstition' conveyed the meaning of 'bad religion', one that simply fell outside, or didn't follow, Christian principles. By the 19th century, this shifted to a meaning that suggested a sense of "misplaced assumptions about causality stemming from a faulty understanding of nature" (Perkins, 2004, p.5). Superstition as it then came to be, was premised on the assumption that an erroneous perception of irrational connections between the tangible and non-tangible world existed, a mistake to which no educated person could surrender. With the rise of scientific knowledge and increasing technological mastery of the environment, this 'wrong' representation of society and the natural world in superstitious thinking actually made it harder to predict in the new paradigm of linear time. As such, rationalism set the chasm between what was considered a rational way to 'calculate' and the superstitious way to predict. In this new conception of the natural world, superstitious thinking not only prevented the advance of progress but became dialectically opposed to scientific rationalism.

A tumultuous undercurrent of ideas of the future, of time itself and progress can be extrapolated from the rich history of almanacs during this era. The Victorian association of progress and the future was perhaps naively optimistic. Intertwined with an incentive for the working classes to believe in the need for self-improvement, progress was a project that Perkins describes as having economic implications, most obviously in the development of modern consumerism (Perkins, 2004, p.5). Also, progress in its technological form was constantly held up to society as the justification for the advance of capitalism. In 1827, as a part of the campaign to enlighten a rising literate class by replacing their existing faulty knowledge which reformers labelled as ignorant and superstitious, the Society for the Diffusion of Useful Knowledge (SDUK) chose to target the widespread of almanacs. Headed by Charles Knight, who sought to produce a respectable replacement to the potential divisiveness of popular trash reading for an 'uneducated' audience, the SDUK aimed to marginalise superstition by establishing central authority on scientific rational knowledge. In this time of political turmoil, almanacs played a large role as a suitable means of propagating the message of dissent and discontent with inherited wealth and corruption. Politically subversive, radical almanacs promoted the importance and popularity of prophecy, while often at the same time mocking and criticising the clergy. Prophecy was closely linked to Millenarianism, and authorities were fearful of the widespread expectation of an end to earthy government. The British Almanac, launched in 1828 by Knight, is one of the first examples of this genre being taken up as a vehicle for reform. On what seemed to be a personal crusade, Knight was the first of several 19th century campaigners to utilise the almanac to advance particular social and political attitudes, one which attempted to transform social consciousness for the reception the doctrine of progress (Perkins, 1996 p.58). In his version of the almanac, the moon changes usually featured in all the almanacs of the time were to be literally marginalised. In its place, at the head of the calendar, was information that would

make use of the mechanical clock easier and space left over were filled with titles like “Useful Remarks”. Also, history as a discipline started to develop and saw a need to measure present time more efficiently and aspired to categorise past time more scientifically. This signalled a change in the way in which time was measured. Amid an industrially booming landscape in the new order of the machine, time itself was becoming increasingly linked



British Almanac, 1829 and 1859

to industry, both concerning the societies’ assimilation to a machine-regulated economy and personal diligence. Not only was wasting time sinful and careful stewardship of it a virtue, but time also became seen as “man’s only property” (Perkins, 1996, p.90). Time obtained a new treatment of currency to be guarded and owned. With the conflation of time and labour and advances in technology, the measurement of time became increasingly important and precise – which would eventually give rise to the commodification of time. Through his research of the clock’s role in the Industrial Revolution, Lewis Mumford famously resonates that “[t]he clock is a piece of machinery whose ‘product’ is seconds and minutes (Wikipedia on Lewis Mumford).” The increasing value of utility gave way to the elevating status of ‘fact’ while other forms of knowledge became redundant. Objective quantifiable data such as royal birthdays in almanacs replaced poetry, puzzles, mythical giants and mermaids, an act as symbolically poignant as much as it was devoid of it. A promotion of statistics was a prominent feature: “29 pages devoted to the heights of mountains in Europe indicate the type of numerical data which were eventually to

replace the company's works of astrology and entertainment" (Perkins, 1996 p.55). Older forms of almanacs were seized, repurposed and integrated into a discourse of scientific respectability. It became a place to educate, distribute, reinforce and criticise values that were at odds with their own. This legacy is exemplified in the invention of blank calendars symbolising a *tabula rasa* of opportunity on which members of society could write their future, increasing the emphasis on individual responsibility. The publication of the first Letts diary in 1812 originated "a new [future focused] concept of diary-keeping completely different from the traditional use as a personal historical record" (Perkins, 2004, p.33).

A different perception of the laws of time, which was increasingly transformed by the rise of statistical measurement, rendered the claims to predict the future as jumping across the flow of time, based on Newtonian laws, out of the question. Just as the mechanical clock's role shifted in the 13th century from regulating the erratic life of ordinary earthly actions by syncing it with the heavenly movements of divine clockwork, the new system of time that was conceived as a way to mechanically regulate economy began to regulate much more. In this part of social history, statistics became the new centralising device reducing other concepts of time into a simplified linear temporal object. As such, methods of statistical calculations proved to operate efficiently in this new system and gained the dignity of science superseding older methods in predicting the future. With its roots from astro-meteorology, Fitzroy's new scientific weather service was a more tightly controlled and elitist discourse committed to disconnect the irrational while the Whig campaigners used a familiar medium to renovate the understanding of time through the pages of the almanac. Propelled by similar historical incentives, this marked the limits of meaningful knowledge at the beginning of the modern age.

Algorithmic futures

"To foretell an event is to provoke it; in social psychology this is called "self-fulfilling prophecies."
- Alejandro Jodorowsky

"If men define situations as real, they are real in their consequences"
-W. I. Thomas

"Our movements, our speech, our emotions and even our dreams have become the informational message that is incessantly decoded, probed and reconfigured into statistical silhouettes[.]"
-Brian Holmes.

Prediction, once the preserve of magic and prophecy, however has perhaps even more importance to modern secular society. As Perkins notes, the rise of a culture of planning, is, in fact, a form of secular prediction. In 1930, Max Weber maintained that accurate calculations as a strategy of *social action* is the foundational principle of development inherent in the process of 'civilisation'. What this implies is that prediction as a consequence can be mobilised to *cause* in the present or how Jodorowski insightfully puts it: *provokes*. The productive nature of pre-

diction is still largely mysterious and strange, although we can speculate that they become enacted as real because it is so closely tied to our own projections, a phenomenon commonly recognised as a self-fulfilling prophecy. This contested relationship between the psyche and the physical; the unconscious influence of desire and its motivation over material reality is theorised by the likes of Bruno Latour (1979), Georges Didi-Huberman (2004), and Michel Foucault as *producing* its subjects rather than *discovering* facts. In the scientific paradigm, this premise is based on the social constructivists view that through the projection of desires, we prepare the environment in which to facilitate it, allowing for our interpretations of the future to become possibly true. Stuart Hall describes discourse as having the power to be applied and effectively become true.

“Knowledge linked to power, not only assumes the authority of ‘the truth’ but has the power to make itself true. All knowledge, once applied in the real world, has real effects, and in that sense at least, ‘becomes true.’ [...] Knowledge does not operate in a void: it has to work through certain technologies and strategies of application, in specific situations, historical contexts and institutional regimes.” (Hall, 1997, p.49)

From this line of thought, the mechanism of self-fulfilling prophecy operating in prediction thus begins with desire which has the potentiality to pre-empt and cause realities, one can see this as the chain of ‘automatic realisation’ through to discourses legitimising knowledge. Diagnosis, as the identification of cause and effect and prognosis, as the prediction of illness becomes interesting when considered in this light. In social psychology, examples such as the ‘madman’ and the ‘hysterical woman’ are classic depictions of subjects being produced as a result of the diagnosed figures personifying particular forms of knowledge, living up to what has been labelled and expected of them. ‘The Weather Project’, an installation of a giant artificial sun inside the Turbine Hall at the Tate Modern, is perhaps one of Olafur Ellisson’s most recognised artworks. With regards to discourse mediating experience, Ellisson makes connections between the intermittently chaotic structure of the museum/society and the unpredictable system of the weather. Just as the museum determines the way knowledge is perceived, the artist talks about weather forecast as “our mediated-experience thermostat” (May, 2003, p.6), pointing out that forecasts preordains the weather, cutting us off from our ability to sense the environment. Our immediate sensations become replaced by TV reports telling us how to feel.

In this postindustrial informational age, the current order of the network has capitalised on prediction’s utility for far darker incentives in the name of progress. Originating as a way to mathematically analyse the game of poker by relentlessly calculating all the possible moves of each player, nuclear strategist’s developed ‘game theory’ which was deployed during the Cold War as a tactic to fight a virtual war. Motivated by the popular theoretical principle of self-interest, this was done by rationally analysing the anticipated moves and incorporating the enemy’s strategies into your own. In Brian Holmes essay, Future Mapping, cites the notion of “the ontology of the enemy” in the cybernetic model described by historian of technology, Peter Galison – this is the conceptualisation of the man and machine within a single closed-loop system into which the motives and future intentions of the enemy are incorporated. It is here that Holmes contextualises the mechanisms of modern surveillance and data bodies in relation to the ever-controlled possibilities of the future. This new synthesis of the object and human became, at the same time mechanical and informational, a phenomenon that Holmes calls, “the infomechanical be-

ing that emerged from the Second World War” (Holmes, 2007). In the 1950’s, mathematician John Nash would apply game theory to all social interaction, seeing society as a system of self-interested individuals competing and strategising against one and another. In the 1970’s this model would also be applied to gene theories in biology. The premise was that at the core of human beings were genes, biological computers that calculated all our actions by a rational genetic program. In essence, this model of animals and humans alike were compared to processing machines guided by numbers. In *The Trap*, a documentary by Adam Curtis, geneticist John Maynard Smith talks about the body as “being a machine, a device, constructed by the genes to ensure the production of more genes” (Curtis, 2005). In this genetically deterministic point of view, reduced and disembodied as an infomechanical entity, we become supposedly easier to objectively calculate and predict in this super rational model dictated by numbers. What are the consequences of the regime of rationalisation in which nothing is safe from numerical conversion, of informational representation? As Curtis shows in his documentary, what was meant to be an objective, more democratic system to govern, turned out in fact to be a far more powerful way to control exactly because of the informational efficiency that has become the ever-pervading omnipotent force. Computing technologies strategise, preempt and construct realities in a way that is far more profound than ever before. The event of the ‘Flash Crash’ was a result of algorithmic intelligence taking control of transactions in the economy without any human oversight. This game of artificial intelligence trying to predict other artificial intelligence is something that carries complex consequences, the potential of which are still largely unpredictable. Kevin Slavin speaks of companies digging underground trenches and building bubbles in the ocean all across the world to facilitate algorithms to close deals microseconds faster than other competing algorithms, all for a communications infrastructure that no human will ever know (Slavin, 2011). If the Flash Crash is an example of computers predicting computers, then the function of preemptive technologies employed by marketing companies, banks and the state are an example of computers predicting humans based on online behaviour and patterns. The ‘Personicx customer relationship management system’ developed by The Acxiom corporation boasts to have the largest continuously updated consumer database covering almost the entire marketing universe in the US (Holmes, 2007). This system contains public tax and census information, provides direct-mail, telephone and email access to individual households, profiles the cultural background, lifestyle, hobbies and aspirations and even track clusters through life-changes, allowing for what the corporation called ‘preemptive marketing.’ As such, social-networking sites such as Facebook and Twitter are the ideal platform to do so; incessantly tracking and mining every bit of data, so much so that they could probably resurrect a virtual doppelganger of you through your ‘statistical silhouette’ or ‘data-double, neatly stored away in a universe of computer chips. As a jump from John Maynard Smith’s gene theory, some current issues concerning privacy in the field of bio-technology, concern the commodification of bio-information traded to third parties such as insurance companies. Genetic discrimination is on the horizon, a memory that harks back to the eugenics movement associated with atrocities of the Second World War. Statistical data allowing for predictive algorithms to calculate are constantly deployed and expanding in an endless digital ocean of surveillance technology as a means of social control while stock market, hit films and chart-topping music predictions are assessed as a way to achieve faster profits. These are just a few examples that dominate the landscape; our inherited reality of Weber’s concept of rationalisation based on calculation. Modelled upon the infomechanic logic of the Cold War, algorithms are utilised to predict events that can be pre-empted and absorbed even before they happen, a modern tale of the capitalisation of self-fulfilling prophecy.

In our increasingly fast paced technoculture, perpetual change estranges us from ‘the past’, the colonisa-

tion of the future has started, in which the present feels less like a continuation of the past than an anticipation of the future. We live in times that surrender to the tenacity of a largely technologically driven society with the exclusive teleology of progress to dominate. Science fiction has imagined the path of rationalisation one step further. SF as a genre that is fundamentally rooted in imagining a future – one that is traditionally open-ended in fostering a sense of utopian or dystopian possibility – has to Hollinger, become a vocation “to dramatize our incapacity to imagine the future’ -that is, to illustrate with the stories the inability to imagine something qualitatively different (Hollinger, 2006, p.454).” Visions of the future in our advanced technoculture won’t only affect the present but prevents it. Science fiction writer, William Bogard’s vision of constant surveillance to the point of simulation in which crime is already defeated before it even happens is echoed by Veronica Hollinger, “[w]e have no future because our present is too volatile.... We have only risk management. The spinning of a given moment’s scenarios. Pattern recognition.” Through studying literature from a genre that reflects a way of thinking about a sociopolitical present defined by radical and incessant technological transformation, Hollinger portrays the discourse of technoscience and it’s preoccupation with futurity not so much as reducing alternative futures by materialising what it hinders immediately – thereby perpetuating ‘now’, but rather highlights the inability to even fathom a distant future, one that is so inaccessible and opaque because the future-present is constant and blindingly close. Technological acceleration has inadvertently compressed time whereby we live in a kind of science-fictionalised present.

Conclusion

In regards to synchronicity, I will thus tie seemingly disparate strands of ideas to form a field of thought. At the centre of this field is the notion of para-rational model, one that involves complementary shades of consciousness in expanding the hegemonic Western model of rational science as the only legitimate way of knowing. Divination as one of the earliest forms of prediction can be considered such a practice, before different modes of inquiry were polarised, as such attributing more power to one mode over the other. Divination’s basis uses irrational means to get hold of something irrational, while the basis of modern science uses rational means to get a hold of something irrational. In its acceptance of paradoxes, irrationality in the divination paradigm is used as a tool and practically accounted for, far from lingering on the stigmatised fringes of rational logic in the hegemonic Western model. The idea of irrationality arose out of what laid outside the socially acceptable. Throughout history, these modes of inquiry would be subject to change, whereby each society would favour one over the other. Epistemological undertakings of ‘acceptable’ knowledge and how its value is constructed is underpinned by social and economic endeavours led by a series of political agendas. Maureen Perkins draws examples from 19th century Britain to show that what counted as ‘knowledge’, the value of information, was dictated by doctrines of progress; a project that had implications in the development of modern consumerism. Against this backdrop of growing industrialism, a steady shift towards favouring rationalism over other forms of inquiry have dominated scientific discourse ever since. Bygone superstitious practices nonetheless have been superseded by statistical calculations, something that modern forecasting technologies and algorithms rest on. Today the divination spirit of the past

can still be witnessed in the likes of mainstream political and economic forecasting, science fiction, and weather forecasts issued by government meteorologist. This reflects how the tradition has not so much as survived, a term that suggests persistence of old forms, but rather continued, a term which suggests new meanings and boundaries (Perkins, 1996, p.11). As a continuation of older forms, techno-scientific predictive practices such as weather forecasting have abandoned intuitive forms of inquiry, at least nominally, to superstition and history, relying only on the systematic deployment of rational and quantifiable methods.

Synchronicity is the meaningful chance gatherings of events that transcend the linear understanding of space and time, and of the psychological and physical. One can think of divination as running on synchronistic time, which conflicted with rationalism's linear time, making it more difficult predict in a linear way. The centralising of linear time was exercised through the reform of the almanac, clock and calendar, an expression given to the belief of progress in the rising of a planning culture. This is what Perkins refers to as the reform of time, a kind of social time management that was largely responsible for the general disappearance of magic at the dawn of modernity. Prediction has perhaps even more value to modern secular society. Weber's notion of accurate calculations as a strategy of social action can be considered a rational form of self-fulfilling prophecy, of attempting to determine the indeterminable through pre-emptive technology. Predictive algorithms inherited from Cold War strategies, are implemented to rationally calculate risk management, survey consumers, increase sales and catch potential criminals before they attack. But as we've learnt from Wiener, there lies a slippery paradox to this as well. As with the sticks and stones, our data-double represents only one facet of a larger whole. Even with advanced tracking technologies, there will always be an element of indeterminacy, of an unreasonable irrationality that cannot be eradicated. Numbers cannot be completely divorced from subjectivity. They cannot be purely objective, because they are a methodological fiction: simplified, coherent, synthesised, – a bias model to deal with a slice of reality, a piece of you. And yet this calculative interpretation casting aside the irrational inadvertently becomes even more irrational to the point of paranoid. Algorithmic interpretations of the future also generate subjectivities, however ones that may be conflictive, esoteric and thus driven underground. The manipulation of the future together with the restriction of alternative undesirable narratives, is exactly what makes modern prediction as both an phenomenon and a discourse so powerful and dangerous, especially when an over dependence on rationalisation erases its own construction. The Enlightenment's legacy was the belief that the future would deliver increasing understanding and control of the natural world and protection from false illusions through reason alone. And yet the paradox is that through the rising power of a rational technological discourse, our world seems to behave even more erratically, as if in an act of metaphysical defiance, evades any measurable means of capturing it.

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