

MYTHSTAKES BOOK 4: THE GREAT 'REDUCTIO AD ABSURDUM' RECESSION

INTRODUCTION

Welcome to the fourth book in the Mythstakes series. Book four will be the last one to be based largely on the mythstake that money has its origins in barter. This tale would have us believe that it is reasonable to begin our economic story in the “economists’ garden of Eden” (a phrase that reminds us of this discipline’s roots in theology). In this Eden, human beings spontaneously appear as individuals with no familial ties, social groups or political structures organising them into collectives. In this Eden, there is no debt, and when individuals meet they do so only for the rational purpose of exchanging commodities through barter. A strict division is thus formed between the world of Value and the world of Values. It ought to be possible, so this conception of human life would have us believe, to rid barter of its cumbersome qualities and build mechanisms of exchange that will operate in an efficient, self-correcting and self-sustaining way, and all with minimal (perhaps even no) governmental oversight and bureaucratic regulation.

Most of us still believe in this tale, as evidenced by the way we assume that, were money to disappear for some reason, we would necessarily “revert to barter”, falling back to the primitive state from which markets, and later on states and bureaucracies, emerged. It’s little wonder we believe this tale, because just about every popular account on economics and the history of money will justify the existence of money and markets with the words, “once upon a time people had to rely on barter” or words to that effect.

But it has been known, for the past ninety years, that the idea that money has its origins in barter is just nonsense. Another falsehood this myth of money from barter and self-correcting markets would have us believe in is the idea that, before humanity could create culture, we first had to get markets established. Only then could we afford to devote some of our time to developing higher values not easily reducible to commodities circulating in exchange mechanisms (or maybe even priceless and hence completely incompatible with any notion of value).

In actual fact, as we shall see in the books to follow this one, it was actually the case that culture came first. Anthropological studies show this clearly, and such findings should have been the nail in the coffin of the barter theory. Nobody has ever discovered people who used barter as the normal way to conduct their affairs; instead we find them using some sort of credit system whose main purpose rarely has all that much to do with the exchange of material stuff. Moreover, every time we have tried to reduce governmental interference and bureaucratic red-tape, in the naive belief we were somehow restoring the ‘free market’, what results has always been more governmental oversight and bureaucratic regulation than ever.

The co-discoverer of Calculus, Gottfried Leibniz (1646-1716) had a favoured form of logical inquiry, which is something known as “Reductio Ad Absurdum”. The idea behind this method is that if you proceed on the basis that a falsehood is true, your inquiry and practices will return absurd results. Such absurdities should inform you that there was no truth in your premises.

Near the end of Book 3, we quoted the words of Valery Legasov: “Every lie we tell incurs a debt to the truth. Sooner or later that debt is paid”. It should be pointed out that a mythstake is not a lie. A lie entails deliberately passing on false information, knowing it to be false. But a mythstake is a belief commonly and sincerely believed to be true, but actually there is little evidence to justify this general acceptance and a lot of evidence pointing to its falsity.

Nevertheless, I think that point of a debt that must eventually be repaid applies as much to societies founded on mythstakes as it does to those built on lies. Thanks to Leibniz’s favoured form of logic, we can see how such a debt affects our lives. It is by making us endure a world that is becoming increasingly absurd.

By following the mythstake of money and markets originating in barter, we have indeed created a great many absurdities. As Book 3 showed, ours is a world in which there is an inverse correlation between social value and monetary reward. A world in which neoliberal champions of the “free market” somehow bring about a revolving door between big business and government, creating “Total Bureaucratization/ Total Marketization” that so blurs the line between them as to make distinguishing between the two an exercise in futility. A world in which perhaps fifty percent of workers have bullshit jobs that either contribute nothing of value, or make the world a worse place than it needs to be. A world that is supposedly running the most efficient economic system possible, but actually chases the decidedly anti-economic practice of running things in a wasteful, inefficient way, all so paper profits can be created out of other people’s increasing debts. Should anyone highlight such absurdities and, presuming such concerns are not dismissed as delusions, the remedy put forward is always “more of the same”; that we should reform the system we have rather than junk and replace it.

I think Legasov was right. We cannot keep ignoring the truth without incurring a debt that has to be repaid one way or another. In the last book in this series to deal with the barter Mythstake and the fake realities built on top of this false assumption, I want to show just how we were made to pay for this myth that is the self-correcting market, said to be a result of natural law but, really, a flawed, artificial construct we collectively recreate.

CHAPTER ONE

Freudian Dreams of Ecosystems

To tell the story promised in the introduction, we need to go back to the end of World War I, and discuss the ideas of one Arthur Tansley (1871-1955). He was not an economist by profession, but rather a biologist. However, his work would come to influence how the economy is popularly thought to operate, and all this resulted from a bad dream.

One night, Tansley dreamed he was in an African village. Then, his wife appeared and Tansley shot her with a rifle. Upon waking up, Tansley did not just dismiss the experience as nothing more than a dream, but was curious to know what underlying meaning it had. To that end, he became interested in the ideas of Sigmund Freud (1856-1959), travelling to Vienna in 1922 to be analysed by the man himself.

It was while he was investigating Freud's approach to psychoanalysis that Tansley became fascinated by an obscure part of Freudian theory. According to Freud, the human brain was really some kind of electrical machine. Data came in through our sensory organs, and in so doing bursts of energy were sent flying around networks inside the brain, just like circuits carrying electrical current.

This idea was fascinating to a biologist like Tansley, because he came to believe that this obscure part of Freud's theory had much larger implications than the man himself had supposed. Indeed, Tansley came to see this idea as having global implications. This was because he thought you could take Freud's model of the human brain as an electrical machine, and apply it to the whole of the natural world.

By running with that idea, Tansley became convinced that Nature's complexity could be reduced to vast, interconnected circuits that linked all animal and vegetable life, allowing energy to flow among them.

According to Peder Anker (b. 1966) who is an historian of ecology, "Tansley's idea of the mind was that of a network...Now this he would transfer, one-to-one almost, into his description of the natural environment, in which energy between species and among the species would constitute a system...so the grasshopper eating the grass will then be energy transforming through the tube into the dune where the beetle would do his or her job".

Having believed he had discovered these vast, interconnected circuits, Tansley decided that they needed a name, so he gave them one. He called them "Ecosystems".

The 'Universal Law of Equilibrium'

Having invented the concept of ecosystems, Tansley came to see how they might be a way of taking an ancient dream in Western culture and giving it a firmer, more scientific basis. This dream, which went back thousands of years, was of a hidden, natural order to nature. Tansley hypothesised that ecosystems regulated Nature as if it were a machine. Indeed, ecosystems did more than regulate themselves, they were also constantly tending towards positions of equilibrium. In other words, should any disturbance happen, ecosystems would

return to an original, balanced state. Tansley called this tendency towards balance “the great universal law of equilibrium”.

But how, exactly, did ecosystems regulate themselves? At the time neither Tansley nor anyone else had a theory of how “the great universal law of equilibrium” actually worked. An answer of sorts to that puzzle would be found. But not by studying Nature. Rather, it would come from theories surrounding a new kind of machine that would come to have a ubiquitous presence in our lives- the Computer.

Computers (or, more precisely, computer networks) would not only shed light on how Nature regulated herself, they would also enable Tansley’s ideas concerning self-regulating system in Nature to influence a certain philosopher’s ideas concerning self-regulating markets. That such a crossover should have happened was pretty remarkable, because one of the core beliefs of the ecological movement that grew up around Tansley’s hypothesis very much opposed a fundamental aspect of this person’s philosophical position. Nevertheless, there was destined to be something of a convergence between these worldviews.

An Objectivist Comes To the States

During the same decade that Tansley developed his fascination for Freudian theory, a Russian emigrant fled from her native country, fearing the direction it was heading in, first through the leadership of Vladimir Lenin (1870-1924) and then, following his death, Josef Stalin (1879-1953). Her name was Ayn Rand (1902-1982) and the country she fled to was the United States.

Once settled in California, she happened to bump into the director Cecil B. DeMille (1881-1959) who gave her a job as an extra in his epic films. Rand herself would go on to be a very famous and extremely influential person, but she would achieve that not through acting but rather through her writing.

This change in careers from actor to writer really got underway when DeMille gave Rand a screenplay to write called ‘The Skyscraper’. She didn’t think much of it, hating both its plot and its characters. But it gave her an idea for a novel which was published in 1943. It was called ‘The Fountainhead’ and, through its protagonist Howard Roark and his struggle not to compromise on his architectural vision of how skyscrapers should be built, we learn about Rand’s philosophy, which she called ‘Objectivism’.

Rand believed that human beings had two ways in which to pursue wealth. This could be done, either through building, maintaining and repairing physical stuff and infrastructure, or through the exchange of political favour. That latter method could make someone very rich and powerful if they really knew how to play the game of back room deals, social networking and “who you know, not what you know”, but all such wealth and power was utterly dependent on the former group continuing to do their jobs. Therefore, all those who obtained important and rich lives through politicking were ultimately parasites, feeding off of the real, industrious work undertaken by engineers and artists.

There are heroes and villains in the Randian world. The villains were those who promoted what she saw as the great lie, which was that human beings are social animals whose

natural state is to be organised into collectives such as political systems or religious organisations that promote altruism. The heroes were those brave souls who rejected all the safety nets of socialism and embraced the truth. And what was that truth? It was the recognition that human beings are alone in the universe. The right and proper thing to do was to dismiss the seductive promises of religious and political figures, reject all such forms of control and adopt an ethic of self-interest. By living up to the principles of what Rand called “the virtues of selfishness”, one could become a heroic figure who neither had outside support nor needed any.

‘The Fountainhead’ was not the first book that Rand had written. She had previously published ‘We The Living’ and ‘Anthem’, both of which were failures. There was every reason to suppose The Fountainhead would flop as well. Not only were initial sales sluggish, but reviews of the book were negative in the extreme. According to such opinion writers, it was a badly written story that revealed its author to be a delusional madwoman. Clearly, the job of politics was to manage and control the selfish desires of the individual. History had shown what would happen were selfishness and greed let loose to run unconstrained throughout society, because the previous decades had seen such laissez faire approaches to life result in the Wall Street Crash and the Great Depression.

But, as it turned out, The Fountainhead attracted a following of loyal readers who promoted Ayn Rand’s writings through word of mouth. They did not claim that it was a particularly well-written story; rather, they pointed out that Rand was not mad or delusional, but rather a philosopher of extraordinary power who had given the world a grand and inspiring vision of how we ought to live. The initial print run of 7,500 copies grew and grew until by 1950, half a million copies were in circulation, and The Fountainead was made into a film. Thanks to this commercial success, Ayn Rand could afford the time needed to expand her philosophy of Objectivism into a far grander book.

Forrester’s Feedback Loops

While she was working on what was to become her magnum opus, a man working with computer systems was developing ideas that would shed light on how “the Great Universal Law of Equilibrium” might work. His name was Jay Forrester (1918-2016) who became one of the early innovators of computers while studying electrical engineering at MIT.

By the 1950s, both the USA and the USSR had developed into superpowers armed with apocalyptic levels of firepower in the form of thermonuclear weapons. Due to the existential risks involved in two such formidable opponents engaging in open hostilities, these two ideologically opposed nations became poised on the brink of conflict during a period known as the ‘Cold War’.

It was during this time that Forrester assisted in the construction of a global network of radar installations all linked to giant computers in the United States. This was the nation’s early-warning system, the eyes and ears of a people fearful of the dreaded moment when their rival nuclear power showed its strength and launched a pre-emptive strike against the Western world. People like Forrester were employed not just to build early-warning networks, but also to develop ‘game theory’ strategies that modelled the world and provided

plausible ways of maintaining a stable balance where nuclear powers remained on stand-by, preventing the Cold War from ever becoming hot.

Having built such a system that worked to keep Doomsday in check, Forrester came to believe that he had identified the process by which all systems, including ecosystems, kept themselves in balance. In order to see how that worked, he insisted, people needed a whole new perspective on life.

“Most people think of action as ‘here’s a problem, I’ll take action and solve it’. Straight line. But that’s not the system in which we live”.

Instead, our systems (and, indeed, all systems) stabilised themselves through a mechanism called ‘Feedback’. According to Forrester himself, “there is a problem, we take action, it may change things, it gives us a new environment for taking the next action and changing things”. So, taking any kind of action led to consequences that fed through the system, eventually returning to shape our future behaviours in ways we could not foresee, and which influenced our decisions in ways that seriously challenged our notions of free will. “We live in these networks of feedback loops”, he said, “that are controlling us and those things we interact with”.

Forrester saw that the worldview he was developing seriously challenged the concept of people as independent beings. “We’re just part of a system”, he observed. “That is anathema to many people, because they like to think of us as independent, but basically they are driven in most of their actions by feedback loops”.

As he developed these ideas, Forrester became one of the leaders in a new scientific movement known as ‘Cybernetics’. According to this movement, Forrester’s feedback loops were everywhere- working in our bodies, in our societies and throughout the natural world. “Physical systems, electrical systems, social systems, political systems, medical systems of the body. They are all fundamentally networks of feedback loops”.

Cybernetics proved to be a compelling idea for both biologists and physicists alike, because it seemed to show how complex dynamic systems like society or the natural world could be held in balance. The mechanisms by how this supposedly worked was explained in the book ‘Control and Communication in the Animal and the Machine’ by Norbert Wiener (1894-1964).

Fred Turner (b. 1961), a cybernetics theorist, described Wiener’s thinking. “If, as Norbert Wiener and his team decided, you can actually link the behaviour of machines and the behaviour of fleshy humans through mathematical formulae, and if you can model and predict those formulae using computers, then you end up in a world where...we are all now part of a universal system linked together by information”.

The Odum Brothers and the Bible of Ecology

The idea that ecosystems stabilised themselves through the method of feedback would eventually spread beyond cybernetics, to the point where Ecology and the balance of Nature became one of the dominant scientific ideas of the 20th century. Two key figures in this remarkable rise were the brothers Howard (1924-2002) and Eugene Odum (1913-2002).

During the 1950s, Howard travelled all around the world so as to collect data from a wide variety of natural environments, such as ponds, tropical rainforests and coral reefs. Whenever he came across such an environment, Howard would apply cybernetic thinking so as to reduce the great complexity of wild Nature. He represented those ecosystems as electrical circuits and even went as far as building real electrical circuits, in order to learn more about how ecosystems maintained themselves. “Odum really believed that you could actually make a model of that system and monitor and watch how all the parts were working”, reckoned the historian of science, Peter J. Taylor (1955-2019).

But what about Howard’s brother, Eugene, what part did he play in all this? Well, he took the cybernetic ideas of Forrester, Weiner, and his brother Howard, and used them to create a very powerful vision of Nature that would dominate thinking for decades to come. This vision was laid out in his book ‘The Fundamentals of Ecology’, which would go on to become the Bible of the Ecology movement.

Speaking of the effect this book had on ecological thinking, the ecologist Daniel Botkin (b 1937) said, “when I first went into Ecology, we really did believe that Nature had to have a fixed stability, it had to be stable. That’s what we were taught. The miraculous thing about Nature was it was stable against all these problems”.

The Odum brothers’ work succeeded in elevating Tansley’s machine hypothesis to a scientific certainty, so this total belief in the balance of nature is not surprising. Just as “every action has an equal and opposite reaction” was a maxim of science proved beyond all doubt, so too could we assuredly say that the world was a network of interlinked ecosystems with feedback loops that kept complex systems in equilibrium, like thermostatic controls regulating the temperature of a room.

The Flaw

Or, at least, that is how dogmatic ecological thinking came to see things. But, had more skeptical minds dug deeper into the Odum Brothers’ work, something very troubling regarding their methodology would certainly have been exposed. For, what did they do? Well, they began with a metaphor, which was that ecosystems worked like machines. When appropriately applied, there’s nothing wrong with metaphors. It might be useful to say something like “a heart works a bit like a pump’ or to begin to explain gravity using the visual image of a bowling ball warping the surface of a trampoline.

But then the question is, what do you do with that metaphor? What the Odum Brothers did not do was to take the empirical approach of going out and gathering data and running experiments to determine the extent to which it is appropriate to apply machine-like analogies to natural environments.

Instead, think about what Dr. Botkin said: “Nature had to have a fixed stability; it had to be stable”. That was the Odum Brothers’ belief right from the start. To them, this “balance of Nature” concept was such a beautiful one that it simply had to be the way in which Nature worked. So, just like economists reducing the complexity and variability of human behaviour and human societies so as to turn that into something that can be captured in equations, and just like cosmologists disregarding inhomogenities so as to allow their Eden of perfect

multidimensional symmetry, the Odum Brothers simplified and simplified the complexity of the natural world so as to come up with something that would fit their circuits and work with their equations. Yes, it all looked very scientific, but it was really something else.

As Dr. Botkin explained, “the balance of nature idea comes from two things. Ancient western mythologies and religious beliefs, and also from the machine age. The actual mathematics that came out of it was the mathematics of machinery”.

In other words, in pursuing their cybernetic principles with all the zeal of a religious true-believer, what the Odum Brothers were really doing was creating a machine-like fantasy of stability. There was little biological reality to this vision. That had disappeared, replaced by inappropriate assumptions that natural systems behaved in mechanical ways and that animals were no different from robots.

All of which is to say that, at the core of the ecological movement there lurked a fatal flaw, in the form of the ‘Fundamentals of Ecology’ stretching the machine metaphor of cybernetics beyond the point of absurdity and distorting the scientific method so as to force an agreement with the belief that there had to be a balance in Nature.

Now, some readers might be wondering how all this connects to Ayn Rand. Because, other than her happening to emigrate to the USA and publishing her novels roughly when Tansley coined the term ‘ecosystem’ and Forrester and the Odum Brothers described how feedback loops worked, they don’t appear to have anything in common.

Indeed, it would seem like her philosophy and that of Forrester could not have less in common if they tried. After all, according to the Randian worldview, to be human is to be an individual with full agency, whereas according to the cybernetic worldview of Forrester, we should not think of humans as individuals in charge of their own destiny, but rather as components in systems, nodes in networks acting and reacting to information flows. One would have to assume, then, that what we have here are two irreconcilable ideas.

But you’d be wrong. By the 1990s all these ideas concerning ecosystems, computer networks, market systems and Randian individualism would all come together to create a grand (though fatally flawed) vision of how a self-organising society could be built on a global scale.

CHAPTER TWO

Let's go back to the Sixties to see how all this came about. By this time, the fusion of cybernetics and ecology was poised to expand beyond being just a new idea of Nature, to become a new organising principle for society, one that would have great appeal to those who had grown disillusioned with Politics.

It would be so appealing to such people, because 'Cybernetic Ecology' held out the promise of a new kind of world. Gone would be antiquated notions such as old political hierarchies and the authoritarian exercise of power, replaced with self-correcting social systems that mirrored how order was maintained in nature.

From Geodesic Domes to Spaceship Earth

Utopian dreams need a great visionary if they are to achieve mass adoption, and in this case such a character came in the form of an engineer working for the US military who always believed there was a great purpose to his time on Earth. "I will make my life an experiment", he once said, "to search for the principles that govern the Universe".

His name was Buckminster Fuller (1895-1983), and he really was a genius. When he was in his eighties, he delivered an epic lecture that lasted a whopping thirty-six hours. It was called "Everything I Know", and it covered so many areas of expertise, Fuller was recognised as a polymath, meaning somebody with expert knowledge in a wide variety of fields.

Marathon lectures are one thing, but persuading people of the validity of your ideas can require more than fine words. Nothing is more persuasive than tangible proof, and Fuller delivered on this, too.

This came about thanks to Fuller taking his core interest and turning it into a practical method for protecting the USA's early warning system in the Arctic. As he himself explained, "I'm an explorer of structures. I'm interested in the fundamental principles by which Nature holds her shapes together".

The challenge that Fuller faced was that the radar installations in the Arctic would have to remain in operation, night and day, year in and year out, in one of the most inhospitable places on Earth. It would obviously be necessary to house such powerful and important equipment in structures that could protect it from Nature's full fury. But whereas most people would assume that would require massive, strong buildings, that was not how Fuller approached the challenge.

Instead, he came up with a very delicate structure. Or rather, each tiny strut that made up the whole structure was, by itself, a delicate thing, but once thousands of such components were joined to form a giant interconnected web, the completed structure- what Fuller called a 'Geodesic Dome'- would be extremely strong and stable.

And it worked. As Fuller himself said, "these [geodesic domes] are very delicate. Yet they've been through about ten years of the most formidable conditions in the Arctic that any structures have ever had to stand".

By building geodesic domes that successfully protected the USA's early-warning system from the great storms of Nature, Fuller had delivered clear evidence of how it was possible to take ecological principles and put them to practical effect. But, could this idea be extended further? Fuller was convinced this was indeed possible, that the principle of copying Nature could also be applied to the creation of new systems for managing society.

By now it was the mid-sixties and the two superpowers were competing in a 'space race' with the ultimate goal of putting a man on the Moon. In order to get to the Moon, though, those plucky adventurers would first have to travel for days on end through the vacuum of space, an environment so inhospitable as to make Antarctic winters seem like paradise in comparison.

In order to protect them from certain death, NASA employed ecologists who were tasked with designing a closed system, monitored by computers, that ensured the environment inside the spaceship remained a comfortable one.

So far as Buckminster Fuller was concerned, that cabin, carrying astronauts in a comfortable cocoon of earthlike conditions as they journeyed through lethal space, provided the perfect analogy for how society should be organised. He presented this vision in a 1964 manifesto called 'The Operating Manual for Spaceship Earth'.

According to Anker, "[Fuller] would say in his lectures, like, 'you guys wonder what it's like to be an astronaut. Well I can tell you. You are an astronaut. We're all astronauts onboard spaceship Earth'".

The NASA astronauts all had duties assigned to them, and Fuller insisted the human astronauts on spaceship Earth had duties, too, which was to manage the global system so that it remained in balance, much like the habitable system inside the Apollo cabin was kept in balance.

The Political View of Fuller and Rand

Now, at this point it would appear that this perspective on cybernetics dramatically disagreed with a Randian perspective, because Fuller saw his 'Spaceship Earth' analogy as requiring a decidedly non-selfish position.

As Peter Anker explained, "notice that suddenly you are not in the centre anymore. The spaceship is in the centre, meaning that you start de-emphasising the importance of the individual human being because you're concerned about the welfare of the system, not the individual".

But, along with de-emphasising the importance of the individual, Fuller insisted that another conceptual shift was necessary if humankind was to successfully care for Earth's ecosystems, and this time his view was more aligned with those of Ayn Rand. "If Man is going to stay onboard Spaceship Earth", he once said, "it can't be done by Politics because Politics is so inadequate". In his opinion, politicians had a fatal flaw in their thinking, that

being the naive idea that they could control the system. What that led to, or so Fuller supposed, was struggles for power leading ultimately to wars.

We should reject the idea that political control could be adequate, and stop seeing ourselves as being members of nations or classes. The proper stewardship of 'Spaceship Earth' necessitated the end of hierarchies of power. Instead, every person should see him- or herself as an equal member of a global system, a system which should be allowed find its own natural order. Once that dream was realised, once we became equal members of a society with our behaviours regulated by feedback loops, there would no longer be any need for hierarchies and struggles over power.

Exodus to the Communes

So, by the mid-sixties, both Ayn Rand and Buckminster Fuller had become deeply skeptical over the effectiveness of Politics and politicians to run society. Furthermore, it could hardly be said that they were alone in their doubts, because at this time there was an entire generation who were every bit as disillusioned with Politics.

In Book 3 we saw how, In New York in the mid-seventies, the financial takeover of the city had led to a kind of exodus of radical thinkers, only it was more of a spiritual quitting than people physically departing from New York. Just prior to this point, between 1967 and 1971, a countercultural movement had risen up, and it resulted in one of the largest migrations in American history. Half a million Americans decided they had had quite enough of city life, and so they left those urban areas and set about creating thousands of experimental communes.

In many such cases, these experimental communes were based on the theories of Buckminster Fuller. Not only did they construct dwelling places following his geodesic dome architecture, but they also adopted his principles of societal organisation.

In one such commune, which was named Synergia by its members, those cybernetic principles were known as 'Ecotechnics'. As Randall Gibson, who was a member of Synergia, explained, "we were trying to create a society based on understanding ecosystems...A society of inter-relationship and balance...That was sort of our ideal with what we called ecotechnics".

Upon being accepted into this ecotechnic society, a member of Synergia became involved in a commune in which there was no hierarchy or centralised control, and where each member was united in their belief that equal members of a system could organise themselves into a distributed network capable of stabilising itself through feedback loops, just as ecosystems maintained their equilibrium.

But, how did they manage to keep politics and hierarchies out of their commune? Well, basically, anything that looked like politics was strictly forbidden. Forming coalitions or alliances with other commune members was not permitted. Should any disagreement or negative feelings arise between folk (always a possibility with passionate creatures such as we humans) those potential catalysts for conflict were dealt with one-to-one. Although these were group sessions, the group remained impartial observers with no taking sides permitted.

Meanwhile, whoever had a problem with someone would speak openly about it to everyone. Then, that person they had accused would express their take on the situation to the whole group, and they would be listened to just as respectfully as the first speaker had been. Thus, through open dialogue in which every individual had an equal right to speak and be heard, Synergia would be a community of free individuals whose anarchic way of life would result in a stable group, thanks to that system of feedback.

“We didn’t use the word ‘system’, reckoned Molly Hollenbach, another Synergia member, “but we very much thought of the whole group, of ourselves, as all connected...It would be like a dance where we’re creating a new kind of society, freeing each person to be fully themselves in the group, but we are affecting each other at all times, like an organism of many who act as one”.

All Watched Over By Machines of Loving Grace

The counterculture movement had seen thousands of communes like Synergia being set up. As far as societies go, these communities were built on a small scale, but by 1968 a group of visionary Californians had come to believe that what such communes represented was a prototype of a new kind of self-organising society that could operate not just on the local level, but on a global scale.

Furthermore, they believed they had found the technological capabilities that would realise this dream. It would come in the form of the new kind of computers being developed on the West Coast. Prior to 1968, very powerful computers (powerful by 60s standards that is) came in the form of mainframes that occupied whole rooms. But, in a move that Buckminster Fuller would no doubt have approved of, toward the end of 1968 a conscious decision was taken to stop developing large mainframes and instead find a way in which many small personal computers could be linked together to produce extremely powerful computer networks.

It would be that combination of ‘personal computer’ and ‘networked computer’ that would allow the communes like Synergia to work on a global scale. Whereas back and forth dialogue between individuals served as the feedback loop holding Synergia stable, this global system would be a world of free individuals, their lives no longer dominated by hierarchy or political control, all linked together through a network of computers that held the global system in balance through the feedback of information.

According to Stewart Brand (b. 1938), who was one of those computing pioneers as well as a leader in the commune movement, “they felt like computers had liberated them and...they were going to enable computers to liberate society...It was going to be a power to the People in a very direct sense. That was an iteration of the Internet, and of Google and all of that. This was a vast network that was self-correcting”.

So, by the end of the 1960s, two ideas had effectively fused together, at least conceptually. These were the idea that ecosystems maintained equilibrium throughout the natural world; and cybernetic theories of computers that promised to apply the feedback loops of Nature so as to come up with a new way of managing a global society. This was a revolutionary idea to be sure. But, or so its followers insisted, it was quite unlike past revolutions, for they had

been political attempts to change the world, whereas this was a movement based on the natural order.

It would not be until June 6, 1969 that the first network control protocol packet would be sent from the data port of one IMP to another, thereby establishing the first ever Internet connection. As for the World Wide Web, it was still decades away.

But, once it was set up and running, what would it be like to live in such a networked world? Had you been walking through the streets of San Francisco one morning in 1967, you might have been one of the people who were handed a manifesto that outlined the world to come. Its author was Richard Brautigan (1935-1984) and he called his manifesto 'All Watched Over By Machines of Loving Grace'.

"I like to think- and the sooner the better- of a cybernetic meadow where mammals and computers live together in mutually programming harmony like pure water touching clear sky", this manifesto proclaimed. "I like to think- it has to be- of a cybernetic ecology where we are free of our labours and join back to nature, returned to our mammal brothers and sisters, and all watched over by machines of loving grace".

CHAPTER THREE

Rand's Opus

Ten years prior to Brautigan handing out his manifesto, Ayn Rand published what was to become her most famous work. Opening with the question, "who is John Galt?", 'Atlas Shrugged' could be called a work of science fiction, but if so it is set in a world that is very similar to 1950s America. It was originally going to be called 'The Strike', but Rand came to realise that such a title gave away the answer to the mystery the plot centred around. So, she changed it to 'Atlas Shrugged', an enigmatic title to anyone who does not know why the events occurring in the story are happening, and a concise explanation for them, if you are familiar with the story.

In a sense, this story could be called a murder mystery, but if so it is not your usual whodunit. Normally, such a tale would involve the murder of a human body, but what Rand explores in this story is what killed the human spirit. The reader soon learns that the question which opens the story- "who is John Galt?"- is not meant as an inquiry into the identity of a person; rather, it is an expression, a turn of phrase adopted by those who have abdicated their duty towards personal responsibility. It basically means "don't ask questions to which nobody can possibly know the answer".

There is, however, a John Galt in this story. Indeed, he is the tale's hero. But he is not the central character. Throughout most of the story, we follow the struggles of one Dagny Taggart, the daughter of a man who established 'Taggart Transcontinental', the USA's largest railroad operator in this fictional world. She has all the practical skills, team-leader qualities and managerial flair needed to coordinate and direct the many employees of the company, and to all practical intents and purposes, she is the boss. But, officially, the head of Taggart Transcontinental is her brother, James, who got that position thanks to inheritance and patriarchal thinking.

In this story, people like James are the true villains, but they seem to be motivated by the purest of intentions. In a world that is falling apart, they seek to increase the reach and strength of governmental powers, introducing new laws, new rules, and more regulation, so that people can turn to the protection of State support as that sense of giving up that is expressed in the "who is John Galt" catchphrase continues to spread. Not only that, but they extol the virtues of altruism, of putting the welfare of others before one's own selfish wants, as the ethical principle by which humanity ought to live.

But, increasingly, this bunch of do-gooders gets taken over by hard-boiled cynics who use the heavy hand of government and altruistic sentiment, now twisted into the principle of "others should sacrifice their abilities for the welfare of the State" to plunder the world of its riches. As the world spirals towards the collapse of civilisation, more and more do-gooders decide it's better to join those who don't even bother to pretend like they have anything but short-term personal gains motivating them (or, maybe, this was always their intention and they just let the mask of altruism slip).

But not everyone ends up as that sort of villain. As well as battling against the increasing stranglehold of state regulation and a growing feeling of "why bother?", Dagny has to

contend with the fact that the industries her railroad depends upon are going out of business as people like her- those with practical money-making abilities- are mysteriously disappearing, leaving those mines, factories etc to collapse from lack of care. She seeks to confront and stop the enigmatic John Galt, who she believes is the 'Destroyer', bringing ruin to the world.

But, in actual fact, Galt is the story's hero, on a mission to stop the motor of the world, which is the pursuit of profit through mutual self-interest. Capitalism and capitalists are the beating heart in the world of *Atlas Shrugged*, the railroads are the veins and arteries of civilisation, and Galt and his followers are engineering a cardiac arrest, not really to destroy the world but to starve its parasites- those who seek to get ahead through inheritance over competence and the trading of government favours over practical ability and market activity- of everything they need to feed their parasitical lifestyles.

Just as was the case with her previous book, *Atlas Shrugged* received damning reviews which somehow didn't stop the book from becoming even more of a success than 'The Fountainhead' had been. There is something about this book that really stimulates emotions in people, with some finding it absolutely ghastly, whereas others swear it is the most profoundly inspiring literary work there has ever been.

Rand's Philosophy

At the heart of this polarising view we have the philosophy of the author herself, which she called 'Objectivism'. The metaphysics of this philosophy is one of objective reality, meaning reality exists independent of human thought and that there are facts and non ambiguous rights and wrongs for humans to discover. The epistemology of Objectivism is Reason, which its followers take to be the only viable method for understanding reality. The ethics of this philosophy is based on "the virtues of selfishness" and the political system it favours is Laissez faire capitalism, that being the political-economic system most likely to enable those other ethical, epistemological and metaphysical conditions to work at an optimum level- or so the followers of Objectivism insist.

Since Ayn Rand says that we should let the world be taken over by selfish Capitalists doing whatever they want, unconstrained by any regulation, it's not too difficult to figure out why some people react with horror when they come across a story like *Atlas Shrugged*. This is even more likely to be one's emotional reaction if you take Rand's trust in selfishness and the profit motive to mean "I am going to take as much as I can and I don't care how many have to suffer as a consequence of my pursuit of unrestricted greed".

But this is actually a misrepresentation of her philosophy. As she herself once said, once you view the world as consisting of objective reality and accept reason and self-interest as the best way to understand reality and how to behave within it, then free-market Capitalism allows "people to deal with one another, not as victims and executioners, nor as masters and slaves, but as traders, by free, voluntary exchange to mutual benefit".

And it really works. Or rather, it does in the fictional world of *Atlas Shrugged*, since its author was able to create an alternative reality that is more of a cartoon representation of real life. For one thing, in the world of *Atlas Shrugged*, you can tell a good, honest businessperson

from a fraudster just by noticing people's appearance. Do they look like all-American heroes, big and strong with piercing, bright eyes that see further than most? Well then, trust such people with your money. Do they have the shifty appearance of a Disney villain, especially in their pale, dull eyes? Run for your life from that type!

Furthermore, the author assumes that her main heroes actually possess the ability assumed by the economic models underpinning free-market theory. In other words, they are the ultimate rational agents, and since that is what they are they can instantly assess a person's value and set their pay level to precisely match the worth of their talents. Therefore, nobody who works for them is ever under- or over-paid, but gets exactly what they are due. This applies just as much to their own remuneration as it does for anyone else. These Randian heroes would never trade their ability for a penny less than it's worth, but nor do they seek so much as a penny more than their worth is due. I think it's fair to say that if the world really did work in this way- if you really could tell a fraudster at a glance and everybody's compensation actually reflected the value they bring to an organisation- then the free-market system would function perfectly well.

It's also worth pointing out that the strike in her book is not just one of top bosses, the owners of the mines, factories and railroads, abandoning their businesses. We know, from those rare occasions when such top Capitalists have gone missing, leaving the rest of the workforce from their own PAs downwards to carry on doing their jobs, that such organisations will just carry on as normal, almost as if those very highly-paid individuals didn't really contribute anything to begin with. But, in this story, every "man of talent", meaning every individual with the practical ability to make, maintain and repair stuff, also go on strike, not only in the world of Industry but in the art world, too. Obviously, if the majority of people who do practical work throughout an economy were to go on strike, such that no ore is being mined, no crops are being picked, and no ships, trucks and trains are delivering anything, systems of government, administration and bureaucracy would soon cease to exist and paper currency would lose all value.

So, the world of Atlas Shrugged is a cartoon world that is not all that realistic. But maybe we should not be too hard on its author for creating a cartoon world that lacks realism? After all, one lesson we have learned throughout this work is that one is obliged to reduce the complexity and messiness of real life, and turn it into something of a cartoon, if one is to extract any kind of useful insight regarding daily life.

Does Ayn Rand manage to develop some useful insights by applying her philosophy? I think so. Many people would agree that one should think for oneself and use one's own powers of reason to figure out the rights and wrongs of a situation, rather than taking the easy option of having "the truth" dictated to you by some authority.

The Californian Ideology

Being published just before the 60s, Atlas Shrugged, with its obvious distrust of authority and, in particular, the authority of Religion, Government, and groups of that kind, was well placed to be appealing to a decade that would become known for its anti-establishment, anti-government, find-yourself individualism. Certainly students on college campuses

thought so, because, particularly in these places of higher education across the nation, *Atlas Shrugged* became the book to read.

One law school graduate said of the underlying philosophy of Objectivism that “dealing with Ayn Rand was like taking a post-doctoral course in mental functioning”, and a professor of philosophy described Rand as “one of the most original thinkers I have ever met...At a time in my life when I thought I had learned at least the essentials of most philosophical views, being confronted with her...placed every thinker in a new perspective”.

With such fulsome praise behind it, and backed by a growing mass of loyal followers whose belief in the philosophical genius of its author only seemed to be reinforced with every brutal attack from those reviewers and social commentators that hated the story and everything they thought it stood for, *Atlas Shrugged* became more than a best-seller. It became a phenomenon. On the 20th of November, 1991, the Library of Congress published the results of a survey showing which book was considered the most influential to American readers. *Atlas Shrugged* earned second place, beaten to the top position by the Bible.

It was also during the decade of the 90s that another group appeared who, if anything, were even more inspired by Ayn Rand than the college activists had been. This group was the new entrepreneurs of Silicon Valley. Not only did they consider themselves to be Randian heroes, they also believed that the technologies they were developing would make it possible to challenge an assumption that was constraining her vision of a free world. That assumption, one at the heart of Western political thought, was that giving individuals too much freedom was a dangerous thing to do, because the result would almost certainly be anarchy of a chaotic and destructive kind.

But now, thanks to the development of computing and communications networks, something called the ‘Californian Ideology’ was forming out of the ideas and practices of this group. This was an odd mix of radical individualism and utopian theories about computer systems that promised to take those cybernetic dreams of self-stabilising ecosystems and apply the underlying principles to a new, far more powerful interconnected social system.

Once such a system was fully functioning, the concept of the nation state would become an irrelevant idea, and if politicians knew what was good for progress, they should give up their positions of centralised control and set this system and the individual free to create a new kind of democracy in which any “man of ability” had equal opportunity to make it as a Randian hero.

Not that every powerful person in American society immediately got onboard with this program. Some still believed that political power could be used in order to bring about improvements to the world, and that included no less a figure than the most powerful political figure of all. President Clinton had been elected on promises of social reform, and he intended to “borrow” money so as to fund his political program, all of which ran quite contrary to the proper way of doing things from the Californian Ideology perspective.

Fortunately, so far as its followers were concerned, they had a man in place who not only held a very powerful position in the world of finance and politics, but was also a member of

the inner circle that had formed around Ayn Rand. If anyone could persuade the president of the folly of his plans, this was the man to do it.

But who was this person? It was the then head of the Federal Reserve Bank, Alan Greenspan. Once upon a time he had not been a believer in the philosophy of Objectivism, but rather another philosophy that was even more extreme in its commitment to rational thinking. This was Logical Positivism, which required its practitioners to question everything, to the point where logic reached absurd conclusions. So, for example, Greenspan's logical positivism led him to doubt in the fact of his own existence, even though Rene Descartes (1596-1650) had shown, as far back as the 17th century, that this was "reductio ad-Absurdum".

Then, Greenspan met one Nathaniel Branden (1930-2014) He was the leader of a small group who had formed around Rand as she worked on writing *Atlas Shrugged*. He was considered to be the second best exponent of Objectivist philosophy (the first being, of course, Ayn Rand herself). He successfully persuaded Greenspan that he could be certain of his own existence, and that he should abandon Logical Positivism for Objectivism. Rand's philosophy appealed to Greenspan so much that he joined that inner circle (in a fit of irony, they referred to the group as "the Collective") and even married one of the female members, Joan Michell. As a member of the Collective, Greenspan had the privilege of attending Saturday night sessions in which Ayn Rand herself read aloud the latest section of the manuscript for *Atlas Shrugged*.

It could be said, then, that Ayn Rand had an agent installed in the upper echelons of political office, in the form of Federal Reserve Chairman, Alan Greenspan. We've already covered the story of how this played out in Book 1. To recap, Greenspan advised the President to cut government spending rather than increase it, since in doing so interest rates would be lowered, leaving market activity freer to work its magic. This resulted in a rise in share prices but, strangely, little change in productivity. At first Greenspan was concerned that this meant a speculative bubble was forming, but, having come under considerable pressure from powerful players in the financial sector, he decided that the contradictory combination of no productivity growth with record share price gains was the result of such radical new ways of engaging in economic activity that prior models were inadequate for explaining how wealth creation worked in this "new economy".

Certainly, things had changed thanks to the introduction of networked computing. For one thing, it meant businesses could now respond to each other's needs and to their customers' desires at lightning speed compared to what had been possible before. Not only that, but now there was the possibility of amassing vast amounts of data on economic activity and handing it over to software models that could predict risk and thus bring stability to the chaotic world of market activity, because a risk that can be predicted can be hedged against. Since risk had been reduced through cybernetic feedback, and market stability realised at last, the growing financial sector became more relaxed in who it deemed creditworthy, and banks started to lend money to people who they would previously not have lent to.

In the mid- to late-nineties, then, things seemed to be going very well for Ayn Rand's legacy. Californian ideologies had developed computer networks that allowed feedback loops to

bring stability to markets, and one of her inner circle had persuaded the President to trust in market forces to fix the American economy, which was evidently what was happening.

As the boom continued, Times magazine reported that a sense of lethargy had come over the White House, like being President was a position that entailed not really doing anything, anymore.

CHAPTER FOUR

The growth in information technology, which we talked about in the last chapter, has been nothing short of remarkable. It is a technological trend that is often used as a means of showing exponential growth in its most powerful and positive form.

The Positive Side of Exponential Growth

There are two ways in which to present this rosy picture. One is to take a certain amount of money (£100, say) and then calculate how much of a certain computing performance that amount of money can buy.

In the case of processor performance (measured in millions of instructions per second or MIPS) that is said to have a doubling time of 1.8 years. In other words, 1.8 years from now, your £100 will buy you twice the MIPS it can currently buy. In another 1.8 years, it will be able to buy twice as much again. Remember the Pentium processor? The first such integrated circuit was clocked at 100 MIPS. By the time we had progressed to Pentium 4, the rate was approaching 10,000 MIPS.

The other way to think about this is to take a certain measure of performance, say, one terabyte of hard drive space, and then calculate how much it costs. When we take this perspective, we see not a 'doubling time' but a halving time. In other words, after a certain period of time, a one terabyte hard drive will be twice as cheap, and then twice as cheap again at the next doubling. And so on.

The effects of these trends are probably best appreciated by considering the consequences they have had for the power and portability of information/communications technology. Computing devices have gone from electro-mechanical devices that filled entire rooms, to silicon-chip based devices that were about the size of a fridge-freezer, to PCs with integrated circuits that could comfortably sit on a desk, to the modern smartphones that we carry around in our pockets. Not only are those smartphones a fraction of the size, they also deliver great performance at a fraction of the cost, relative to how expensive such computing power used to be.

It is indeed a marvellous thing to see a Third-World farmer using a smartphone that has orders of magnitude more processing power than the computers that helped land men on the Moon. But, there is another darker side to this exponential growth.

The Findings of 'World 3'

Often, when we talk about computers, we use terminology like 'virtual reality' and 'cloud computing' that give the impression that these are ephemeral, immaterial things that we are talking about. But, of course, they are not. They are physical devices that require real, material raw resources for their manufacture, and which consume energy every time we use them.

Obviously, a single smartphone, small enough to slip into one's pocket, requires far less material resources for its manufacture than one of those old, fridge-sized 'mini-computers'. I

think somebody once calculated that, were you to construct a computer as powerful as a modern smartphone using only 80s-level computing technology, you would need an articulated lorry to carry around the behemoth such a computer would be. That all that storage and processing power can now fit into the palm of one's hand is held up as an example of "ephemeralisation", of doing more with less.

But, demand being what it is, we are turning out billions of smartphones, and each of these billions of devices require non-renewable resources. Moreover, the range of capabilities they place at our fingertips, such as the much-touted generative AI capabilities, comes not from the inner workings of the smartphones themselves (at least, not exclusively so) but from the fact that they offer remote access to sprawling data centres that consume prodigious amounts of raw materials and energy. None of this is possible without industrial practices on a scale to boggle the mind, and none of it is really sustainable if it puts too much strain on Earth's viability as a living planet.

Since the 1970s, there have been concerns that our current trajectories may not be at all sustainable, and that we are heading for an environmental crisis of global and near apocalyptic proportions. This impending calamity cannot be attributed to any single cause, but is instead a horrifyingly complex systemic effect that crosses national boundaries and involves the whole of Nature.

Indeed, when it was first outlined, in the 1970s, the complexity of what we were facing was so great, politicians really had no idea how to go about addressing it. The old hierarchies of power, and national governments, were just too ill-equipped to deal with the complexity of the situation.

So, what, the world was heading for disaster and there was nothing to be done about that? Well, that's not quite the conclusion that was drawn at the time. Global calamity was the probable outcome, yes, but not an inevitable one. If Politics and politicians were unable to handle the complexity of what we faced, then that was just one more reason for these old power games to get out of the way, and let the idea of the world as a self-regulating system take centre stage.

One person who was particularly prominent in advocating such a transition was our old friend and cybernetics pioneer, Jay Forrester. During the 1970s, he had developed his cybernetic theories into computer models of corporations and even whole cities. This work was published in a book called "Urban Dynamics", in which Forrester set out to show how statistical models could be used to simulate the relationship between a city's infrastructure and its residents. Such work had helped Forrester become a pretty powerful figure.

Meanwhile, during the same decade, a group of international businessmen and technocrats had formed a think tank for the purpose of trying to find some way of solving the impending environmental crises. They called themselves the 'Club of Rome', and Jay Forrester became very interested in the problems this 'Club' was set up to solve, because, so far as he could see, the only viable way to do so was to look at the world as one cybernetic system.

"Our problem is the big problem", he told the Club of Rome at a meeting in Switzerland. "Our problem is a hard one and you're not dealing with the hard problem".

The “hard problem” that the club was not dealing with was the sheer complexity of the modern world. On the way back from that meeting, Forrester began to sketch out a picture of the world as a system. It represented the world in terms of population, resources, investment in agriculture, and the accumulated pollution of the world, along with lines spread throughout the sketch, connecting this to that in a network that represented the many feedback loops that Forrester believed spread like invisible veins throughout the natural and industrial world.

Upon his return to the United States, Forrester set up a group within MIT to help turn that sketch into a computer model of the world. The team that did this was headed by Forrester's department assistant, Dennis Meadows (1941-2001) and his wife, Donnella (1941-2001). Forrester had already built a systems program called ‘World 2’, and the Meadows team used that as the starting point from which to build a brand new model, which became known as ‘World 3’.

World 3 used five variables, those being Population, Food production, Industrial output, Pollution and Finite resources, and it simulated the interactions between these variables over the next one hundred years or so.

Once the model was built, the team took all known data about population growth, industrial production, food and agriculture, natural resources, and pollution, fed all that data into the model, and let it run to see what predictions it would come up with.

The Dark Side of Exponential Growth

There were two results that were particularly eye-opening, and they both had something to do with exponential growth. One thing the model showed is that, although production per capita is increasing, it is not increasing the same way for all nations. Instead, industrialised nations were growing exponentially, but unindustrialised nations were growing linearly. Should those trends continue, then potentially that could result in the development of what are, essentially, two different worlds, more alien to each other than East versus West or, potentially, maybe even the Nobility and the Peasantry of feudal times.

Now, one might think that the obvious way to address that potential problem would be for all nations to become industrialised, so that they all grow exponentially. But that does not seem like such a great idea once you take into consideration the second, more pressing outcome predicted by ‘World 3’.

When we last talked about exponential growth, we did so in the positive sense of it being able to make things possible, and affordable, far sooner than linear thinking would lead us to believe. Gene-sequencing is often used to highlight this difference. The plan to sequence the human genome began in the 1990s and, given the speed at which the genome could be scanned using the technologies then available, it would have taken thousands of years before the entire genome was mapped. Or so linear thinking would have had us believe. But, thanks to exponential growth in gene-sequencing tools, it only took slightly under fifteen years to complete the first draft of the human genome. During that time, the halving period for the cost of sequencing DNA base pairs halved every 1.9 years. So, whereas the cost was

\$10 per finished base pair in 1990, by 2004 it had dropped to mere cents, opening up the potential of personified medicine affordable for all.

But, exponential growth does not only deliver the good stuff far sooner we who think linearly expect, it also brings about problems and crises far sooner, too. Pressing concerns that once seemed many, many generations away are suddenly right around the corner.

Take the consumption of chromium, for example. Assuming we remained at the rate of consumption going on in 1972, this non-renewable resource would have run out eventually, but reserves would have lasted for another 420 years. It's kind of hard to be too concerned over an outcome that won't happen until like three hundred years after one's own generation is dead. But, once exponential growth is taken into account then, as the World 3 model shows, it's not 420 years before supplies of that material are depleted, but a mere 95 years, well within the lifetimes of a lot of us.

What's going on, then, in the standard run, is that the industrial capital stock grows to a level where the required input of resources needed to keep it going, quickly becomes truly enormous. The very process of that growth (exponential, not linear) depletes an ever-doubling fraction of available resource reserves. Since the sources from whence such materials are coming from are depleting ever more rapidly, more and more capital must be used to access what reserves are still available. But, that inevitably leaves less capital to be invested for future growth until, finally, investment can no longer keep up with depreciation, resulting in the collapse of the industrial base.

As Forrester himself explained, running the World 3 Model "showed that in all likelihood, population would overshoot the carrying capacity of the world, and then you would have a collapse of population back to a lower level, and that the standard of living would decline through all that period in a serious way. The model based on current policies lead essentially to disaster".

'Limits to Growth'

Having obtained these grim results, it fell upon the Club of Rome to spread word of the probable outcome that team Meadows' model had arrived at. This they did by publishing a book, called "The Limits to Growth", which went onto become a bestseller. As well as being a hit in a publishing sense, it also did a great deal to transform environmental debates. The reason why was all down to Forrester's cybernetic approach, because his models offered a way of conceptualising the problem in a seemingly scientific- and therefore neutral- way. It was a vision of the world as one, interconnected system, and as such it called for a new approach to problem solving that transcended Politics and petty national interests. As a Club of Rome official said, at a conference held in Stockholm in 1972, "this is the beginning of a debate. Nobody's decided what the limits are. One can question whether it's 2010 when we all collapse or 2050 when we all collapse, but what is absolutely certain is, you cannot run a planetary society on the total irresponsible sovereignty of 120 different governments. It simply can't be done".

At this point, I think it would be worth explaining what it is that the standard run of the World 3 model predicts. Talk of "resource depletion" may make it seem like the problem involves

totally running out of a particular, and vital, non-renewable resource. But, what is really being argued is that, over time, and more quickly than linear thinking would intuit, we approach and then pass the point where it is more economically expensive to extract that resource than the resource is worth.

Why should that matter, though? Surely, as that particular resource loses commercial viability, we would see increased investment going into researching and developing alternatives, thereby ensuring a viable replacement is ready to take over and keep the curve of exponential growth going? That's what happened as each particular computing paradigm began to approach its limits, after all.

But, of course, if those alternatives are non-renewable too, that only amounts to a slight delay as the exponential consumption rate needed to feed the monster that the industrialised world has become, eats its way through those alternatives too. We reach a point where it is the case that the cost of extracting materials is not worth the value of those materials for multiple resources, most of which cannot easily be replaced with something more abundant.

Also, long before we reach that ultimate crisis point, other economic systems will have grown to be dependent on the level of output that the industrialised base is producing. Take modern agriculture, for example. So long as you have industrial outputs such as fertiliser, pesticides and- most especially- the energy for mechanisation- you can sustain a population of eight billion. But what if that industrial infrastructure collapses and we have to go back to Neolithic forms of farming? In that case, we could only support a global population a fraction of the size it is today. And, with our ability to grow and distribute food becoming increasingly unviable, are we not likely to see wars over diminishing resources breaking out between the nations of the world?

Again, scenarios like these would seem to be nothing short of reasons for despair. We should remember, though, that such results come from inputting certain numbers into the five variables of the World 3 model. Being variables, you can input different numbers and maybe get different results.

Those different numbers would correspond to us adopting different behaviours; engaging in alternative practices. Faced with the impending disaster that resulted from plugging "business as usual" into the model, Forrester realised that some radical alterations were needed. Such changes would involve world governments abandoning the idea of continual growth. After all, Nature did not aim for growth, but for equilibrium.

"The idea of growth is in contrast to the idea of equilibrium", Forrester reckoned, "where you're maintaining a constant of equilibrium level of population and enough industrial activity to sustain that population...and live within the boundaries set by the world".

In order to bring about this steady state, according to Forrester, the politicians' dream of changing the world had to be abandoned. Henceforth, Politics should take on a management role, the aim of which would be to manage the existing system and hold it in equilibrium.

Environmentalists' Opposition

Given that Forrester's dream was of a social system that emulated the feedback loop mechanisms that (as so many believed back then) kept natural environments in balance, one might be forgiven for supposing the environmental movement was fully on board with what Forrester proposed.

In actual fact, though, large sections of that movement opposed his idea, and they held protests outside the conference so as to voice their opposition.

But what was it about Forrester's proposal that such groups opposed? To answer that question, we need to go back to 1935 and look at the philosophical ideas of one Field Marshall Jan Smuts (1870-1950). He was the autocratic ruler of South Africa at a time when the imperial power of Britain was waning and, just like Arthur Tansley, he used ecological ideas to develop a philosophical system which he called 'Holism'.

In many ways, Holism was just like the system Forrester was proposing. It presented the whole world as one great organic system in which everything had its natural place. As Peder Anker, explained, "[according to Holism] every human being would have its place within society...and every other species- grass, grasshoppers, you name it- would have their place in the environment...It is an order of nature and an order of society that celebrates equilibrium...and Holism became a tool to make the British empire more stable".

In brief, then, Holism said that everything would be fine so long as everyone and everything stayed in its proper place. In other words, it adopted that old concept of Reason that we talked about in Book 3, one that sees it as a moral force that ought to constrain creativity and passion, keeping those potentially dangerous impulses in check.

Also, it is pretty obvious who benefits the most from systems that maintain the status quo- those in positions of power like Field Marshall Smuts. Just like the Club of Rome some forty years later, Smuts envisioned a new world order where artificial distinctions like nations would disappear. What would replace those obsolete concepts would be a world system modelled after the British empire. Naturally, the white European races would be the ones to manage it, since that was their natural place in the system.

When the philosophy of Holism came to the attention of Tansley, he derided it as "the abuse of vegetational concepts". What he meant by this was that Smuts was using the belief that science is neutral in order to push through a political agenda.

As Todd Bjork (b 1955), an environmental activist, explained, "the trick is claiming that...in nature you have this balance and we need a society to have the same balance...thus, you cannot change society, because society should be the same as nature...so, it's a sort of intellectual trick. They needed this concept of the balanced nature to protect the elite and to protect the system".

Fast forward to the 1970s and the solution presented by the Limits to Growth and we again find proposals to enforce the stability on the world that are no more neutral than Smuts'

Holism had been. As Peder Anker said, “the idea that ecosystem theories, theories of equilibrium etc, that these are neutral, is bogus. They are politically charged”.

That was the reason why a large section of the environmental movement were against Forrester’s proposal. While he presented it as the only way to save the world, they saw it as a ruse by those in power to control the world.

The main point of criticism for this group was that there were variables that Forrester and his team did not think to include in the World 3 model. It did not include any feedback loops for political change- the idea that, by changing their values and goals, future generations of humans might adapt to problems in such a way as to change the whole system.

That could not happen in the World 3 model, because what it represented was a machine vision of the world, and in this model human beings are only present as mechanistic nodes.

In Book 2 we saw how Marx had opposed the enlightenment view of the Newtonian universe as being like a clockwork mechanism, because machines can only either carry on doing the job they were designed to do, or they malfunction. Marx was desiring a dynamic world in which change is possible, not one in which self-regulation either maintains the status quo or self-destruction ensues. He believed revolutionary transformations were possible because human beings, unlike machines, could behave in ways they hadn’t before.

This was a possibility that Forrester’s model, with its machine-like representation of people, totally ignored, and so it seemed to present us with a stark, binary choice, between catastrophe or maintaining the existing system in a steady state.

So far as this group was concerned, though, it was not the role of the environmental movement to hold the world stable, but rather to fight for change. That a “balance of nature” argument was being put forward as a reason for stasis rather than change was proof, so they saw it, of their movement being hijacked by Right-wing think tanks and Cold War technocrats who were using the same trick as Smuts, that of disguising politically charged scenarios as neutral scientific theories. They wanted no part of it.

One World, One People, Flawed Thinking

In the end, though, the protests did nothing to halt that agenda, mostly because the idea that Forrester presented, one of a cybernetic vision of the world as one interconnected system, was one that was about to really strike a chord in popular imagination. As ideas of this sort spread, what resulted was a profound shift that challenged the enlightenment idea that we humans are in control of our own destiny and, therefore, in a sense, separate from the rest of Nature.

From the 70s onwards, TV shows were promoting points of view such as “we’re all part of the web of life and the sooner man fully appreciates this, the better”, and when people on the street were asked what ‘ecology’ means, they would say things like “well, ecology is the balance of nature. It’s the relationship between you, me, the plants and animals, and the world in general”.

In all such perspectives there was an underlying view of human beings as mere components, nothing more than cogs in a system, tasked with the duty of maintaining its natural balance. Not very inspiring when put that way, it is true. But there was another aspect of this vision. By embracing the idea that everything in the world, ourselves included, were interwoven into complex webs and networks of feedback loops, we could imagine epic visions of connectivity and maybe realise them, even if, currently, they only existed as some utopian ideal. Such thinking would lead to the Californian Ideology that helped bring about the World Wide Web, ecological concepts like Gaia theory and representations of the global economic system as a self-regulating mechanism.

All these concepts were very appealing because popular imagination had largely come to agree with Forrester regarding what the “big problem” was and how to address it. As one commentator said, “now the problem is totally global, which is going to mean running the entire planet as a global system without upsetting the natural balances that are there”.

“The System” had to be maintained, managed, held in stasis. Change was out, since there was no third way. It was either stick with what we currently have (perhaps tinkering with it or reforming it, but revolutionary change was not possible) or going through collapse. And nobody save for nihilists wanted that. It was the fact that such ideas seemingly mirrored the natural world that made them seem so powerful, because that led to the perception that these were scientific ideas of how to organise ourselves and conduct our affairs. As such, they didn’t appear to be based on a political ideology, but rather on something far more neutral and unquestionable. After all, wasn’t it all based on the way Nature itself achieved equilibrium? Who were we to think we could do better than Nature?

By giving up on the idea of revolutionary change and embracing stasis, we did not think we were losing control but gaining it. We would become mechanistic nodes in a self-regulating network of feedback loops that would maintain a system that would function optimally well forever, taking care of us for its own good as much as ours. The system promised far greater control and prosperity than we could ever have hoped to achieve as unconnected, isolated individuals.

That was the promise. But it was a false one based on a flawed understanding of ecosystems as self-regulating. It did not consider just how uncontrollable forces like Love and Power can be.

CHAPTER FIVE

One person who learned just how uncontrollable a force love can be was Ayn Rand. When we last discussed her and her philosophy, we looked at her most famous work and why people either love it or hate it.

Among those who loved it was that inner circle of followers that formed around Rand, who ironically called themselves “the Collective”. They included Alan Greenspan, Nathaniel Branden and his wife, Barbara (1929-2013) and such was their love and admiration for their hero, Ayn Rand was elevated by this group from an extremely influential figure to an icon deserving of veneration and worship. Along the way, the ‘Collective’, even though it was formed around a figure that stood above all for rationality and “think-for-yourself” individualism, morphed into something that looked an awful lot like a cult.

Was Rand’s ‘Collective’ a Cult of Personality?

Rand herself denied any such accusations. “My following is not a cult. I am not a cult figure”, she would assert during interviews. Meanwhile, the key members of her “Collective” were saying their group was not, actually, technically speaking, a cult...but perhaps it was understandable if some supposed it was. For example, we find the following in Barbara Branden’s biography, “The Passion of Ayn Rand”. “Although the objectivist movement clearly had many of the trappings of a cult- the aggrandisement of the person of Ayn Rand, the too ready acceptance of her personal opinions on a host of subjects, the incessant morality- it is nevertheless significant that the fundamental attraction of Objectivism...was the precise opposite of religious worship”.

So, the argument is that, since Rand was not literally worshipped as a god or considered as having some unique insight into the mind of a deity, and since, furthermore, she rejected religious thought as bad philosophy, therefore those who followed her highly rational worldview could not possibly be religious either, and therefore their group could not be a cult.

The problem with that kind of thinking is that we do have examples of non-religious groups that became a type of cult- a “Cult of Personality”. We can take the various characteristics of a cult and compare them to “the implicit premises to which everyone in our circle subscribed”, as recorded in Nathaniel Branden’s memoir, ‘Judgement Day’, to see whether or not accusations that Rand was the leader of a cult were justified.

One of the characteristics of a cult is that the leader of such a group is glorified by his or her followers, to the point of virtual sainthood or divinity. In other words, there is “Veneration of the Leader”. In his memoir, we find Branden asserting, “Ayn Rand is the greatest human being who has ever lived” and “‘Atlas Shrugged’ is the greatest human achievement in the history of the world”.

There is also the belief, among those in cults, that the leader they follow cannot be wrong. This characteristic of cults is known as “Inerrancy of the Leader”. By Branden’s own admission, “No-one can be a fully consistent individualist who disagrees with Ayn Rand on any fundamental issue”.

Another tendency of cult followers is to treat their leader as though he or she has powers of omniscience. This they do by accepting whatever the cult figure says on all subjects from the most trivial to the most profoundly philosophical. According to Branden, "No one can be a good Objectivist who does not admire what Ayn Rand admires and condemns what Ayn Rand condemns".

Given this belief, it should come as no surprise to learn that "Absolute Truth" is another characteristic feature of a cult. In other words, followers believe that they, through their leader, have discovered final knowledge on any number of subjects. According to Branden, "Ayn Rand, by virtue of her philosophical genius, is the supreme arbiter in any issue pertaining to what is rational, moral or appropriate to Man's life on Earth".

The reference to morality in that last quote leads us neatly to yet another defining feature of a cult. This is the belief that, through their leader, the members have developed a system of right and wrong that applies, not just to this particular group but to everyone everywhere at all times and places. To be included as a member, one must follow this strict code, and to err in any way leads to punishment or banishment from the group. In short, the leader/group possesses "Absolute Morality". Branden reckoned, "once one is acquainted with Ayn Rand and/or her work, the measure of one's virtue is intrinsically tied to the position one takes regarding her and/ or it".

Having laid out those premises in his memoir, Branden then asserted, "but it is best not to say these things explicitly...one must always maintain that one arrives at one's beliefs solely through Reason". "Hidden Agendas", obscuring or not fully disclosing the true nature of the group's beliefs and plans, happens to be another one of those key characteristics that define a Cult of Personality.

In all, there are nine key characteristics that define a cult. Going by Branden's own admission, it looks very much like "The Collective" had beliefs that more or less matched six of those characteristics.

But, what about the three that we have yet to outline, do they also align with the implicit premises of the Collective? Whereas the six characteristics already mentioned have a common theme in that they all concern themselves with Truth or Morality, the remaining characteristics have to do with pervasive techniques and deceit, particularly of a financial and/ or sexual nature. We've all heard stories of cult figures who bed all the starry-eyed hero worshippers they can, and who seem to be doing extremely well, materially speaking.

Now, I think it would be inappropriate to say Ayn Rand used fraud to become rich and famous. She certainly did not cheat anybody, she just wrote some novels that went on to be great successes- phenomenally so in one case. Nathaniel Branden himself, the number two exponent of Objectivism, set up the Nathaniel Branden Institute in 1958, which sponsored lectures and courses in Objectivism, and as far as I know there is no reason to suppose that paying customers attended such events through any kind of coercion, but simply because the power of Ayn Rand's ideas really appealed to them and they wanted to learn more of her philosophy.

So, we'll give the Collective a pass when it comes to financial deceit/exploitation, since there's no evidence to support such accusations.

The Downfall of the Collective

What about sexual exploitation, though? Ah, well, here we have to talk about the fall of Ayn Rand and the disintegration of the Collective. During the 1940s, Ayn Rand had married an actor by the name of Frank O' Conner (1897-1979). After her ideas met with some pretty brutal hostility, she sought comfort and found it- not in her husband's arms, but the arms of Nathaniel Branden.

This happened in 1953, by which time Branden himself was a married man, betrothed to Barbara. Nevertheless, despite the fact that both Ayn and Nathaniel had sworn oaths of monogamy to their spouses, she decided that she was in love with Nathaniel and that they should have a sexual affair.

Being Ayn Rand, she made no recourse to irrational passions of a "Love is a drug that's got its hook on me" or "can't help falling in love with you" kind. Instead, she confronted Nathaniel's wife, Barbara and, with her own husband present, rationalised the affair as the only appropriate course of action. "By the total logic of who we are- by the total logic of what love and sex mean- we had to love one another", she told them. "I know that you recognise the rationality of what we feel for one another".

In his memoir, "Judgement Day", the source that gave us strong hints that Rand was a cult leader, we find the following statement from Nathaniel Branden. "Since Ayn Rand has designated Nathaniel Branden as her "intellectual heir" and has repeatedly proclaimed him to be an ideal exponent of her philosophy, he is to be accorded only marginally less reverence than Ayn Rand herself".

So, anyone who became a member of the Collective had to recognise Ayn and Nathaniel as the world's two greatest intellects. Surely, philosophical Superwoman had to couple with philosophical Superman? Being such a charismatic and persuasive character in the eyes of her closest followers, Rand succeeded in getting the other spouses in this affair to agree that henceforth, once per week, she and Nathaniel should have an afternoon and evening of intimacy. As well as agreeing to that arrangement, the four also agreed that the Ayn/Nathaniel affair should be kept secret from everybody else in the Collective.

Was this deceit and sexual exploitation? That depends on whether or not you think it is anyone else's business, other than the married couples directly involved, to know about any affairs they agree to have. As for sexual exploitation, does it make any difference if a charismatic leader beds a devotee by arguing "rationality and logic tells us we should", rather than "God tells us we should"?

Whatever the rights and wrongs of this arrangement, the love affair of Ayn and Nathaniel was not destined to be a happy secret ever after. They remained a part time, clandestine couple until 1958, and had an on and off affair for about a decade after that, but by 1968 the affair had long since dwindled.

In that same year, the spark of passion was re-ignited in Nathaniel Branden. Only, this time, his flame was not Ayn Rand herself but yet another member of the Collective.

Given that she had already rationalised that this married man should have affairs with other women, and given also that their own love affair was pretty much over at this point and, finally, given that her whole philosophy was based around the concept of Individualism, of oneself needing nobody else in order to live a worthwhile life, one would be forgiven for supposing that Ayn Rand accepted Nathaniel's latest affair in a calm, rational manner.

Not a bit of it. "Get that bastard down here, or I'll drag him here myself!", she is said to have screamed. Branden duly arrived at her apartment to face Judgement Day (the name of his memoir, as you will recall). "It's finished, your whole act", she yelled in a rant that lasted several minutes. "I'll destroy you as I created you! You won't have the career I gave you, or the name, or the wealth, or the prestige. You'll have nothing!".

With that, Branden was duly booted from the Collective with his former idol's final curse ("if you have an ounce of morality left in you...you'll be impotent for the next twenty years!") ringing in his ears and his cheeks burning from having been slapped in the face. Four times.

Given the clandestine nature of their affair, and the fact that nobody in the Collective was told the real reason why Nathaniel Branden- Rand's "intellectual heir" remember- was suddenly thrown out of the group, we can also include 'Deceit: Followers are not told everything that they should know about the leader...potentially embarrassing events or circumstances are covered up' to our list of ways in which Objectivism became a cult of personality.

What did she tell the group? Well, she issued a six-page letter which included the following. "Mrs Branden confessed that Mr Branden had been concealing from me certain ugly actions and irrational behaviour in his private life, which was grossly contradictory to Objectivist philosophy". No reason was given as to why his first affair was moral and rational whereas his second was not. Indeed, the exact nature of his transgression (falling in love with another woman) was never revealed. Does that mean we can add "Hidden Agenda: the true nature of the group's beliefs and plans is obscured from or not fully disclosed" to our list? You be the judge.

If you agree that all this smacks of deceit, sexual exploitation, hidden agendas and persuasive techniques, then Objectivist philosophy did indeed morph into something that meets all the criteria of a cult.

Whatever is the truth, this episode was the beginning of the downfall for Ayn Rand, the master of the absolute moral double standard. More and more members were ejected from the group following increasingly ferocious condemnations triggered by increasingly minor transgressions, until, by the time of her death in 1982, Ayn Rand was left with only a handful of friends.

Is Love Logical?

Now, a lesson we might learn from all this is that there are limits to Rationality and Morality. Taking the former first, Rand tried to justify her affair in purely rational terms, claiming she and Nathaniel had to become lovers “by the total logic of who we are- by the total logic of what love and sex mean”.

But is it really appropriate to say that pure logic determines who we couple with? It could be argued- as indeed it has- that dating takes place within a marketplace of sorts. The commodity on sale is companionship, and the currency by which it is bought is one’s value as a partner.

Logically speaking, what should a person be looking for when choosing a partner? The would-be spouse should be the most physically attractive, wealthiest, cleverest, humorous, kind, and psychologically well-adjusted person who would be prepared to couple with you. By and large people do tend to hold out for the most physically, emotionally and psychologically desirable person they can get, as evidenced by statistics that show, on average, that couples tend to be of more-or less equal desirability.

However, it’s when we look at individual cases rather than average results, and also the costs involved in staying single, that things get interesting. So, let’s follow such a logically-focused singleton as they enter the dating marketplace determined to couple with the most desirable partner who would accept them as their spouse.

Right away we hit our first problem. Mr/ Ms Dreamboat is one individual among a population of billions, a veritable needle in an enormous haystack. In all probability, our singleton will be searching for a long, long time before the absolute best partner they could get makes an appearance.

What to do in the meantime, stay single until that ideal partner finally shows up? The problem with that strategy is that you cannot stay single without incurring costs, such as loneliness, not to mention all the awkwardness of being in the dating market with all the promises and perils that entails.

If your ideal partner is taking too long to show up, then the next most logical thing to do would be to settle for the best person you have found so far. Now that you are together, you can both invest time and energy in developing that relationship.

But, such a relationship is vulnerable if one lets logic determine who one spends one’s life with. After all, if you are determined to partner with the absolute best you can get, and not just Mr/Ms “Good-enough”, then as soon as somebody slightly better comes along you would end the current relationship and move in with “Mr/Ms Bit-Better”.

If your current partner is logical too, they will calculate that this is what you will do, meaning whatever investment they may make in the relationship is vulnerable to being undone. This would obviously not be the case if that partner happened to be the most desirable person on Earth, scoring ten out of ten on every count, because if that was so nobody would ever want to leave them. But, one is most probably not this perfect partner, so why should they commit

themselves in the first place if the other person in the relationship would terminate the relationship as soon as a slightly better prospect comes along?

One way in which our singletons could alleviate such fears, would be to sign up to some kind of legal contract designed to make it difficult for either partner to just walk away at the first sign of a better alternative. That's what people do when they ask somebody to marry them.

According to the economist, Robert Frank (b 1945), getting married serves the same purpose as tenants signing a lease. Just like with dating, landlords would, logically, prefer to put the best possible tenant in their apartment (but settle for the best they have found so far) while their tenants logically want the best place they could get (but settle for the best so far). Also, just as is the case with dating, there are risks and costs involved here. The tenant is at risk of being evicted the moment a better tenant comes along; the landlord potentially has the cost of an empty apartment should the current tenant leave it for some better place.

There is no problem if the best possible tenant is in the best possible apartment, as there would be no superior alternative that, logically, would end this arrangement. But, assuming that's not the case and what we have is, instead, a compromise of "the best I have found so far", then by signing a lease that restricts the landlord's freedom to evict and the tenant's freedom to leave, the partners in this relationship bring about a restriction on their freedoms that actually work to mutual advantage.

According to Frank, the same logic works with marriage. But, both marriage and tenancy involve some pretty sophisticated legal apparatus, and that's something we can hardly attribute to the way we evolved. After all, our ancestors, who lived for millions of years before the discovery of writing, could hardly have signed up to anything. How, then, could they have agreed to begin a relationship that came with no formal guarantee that their prospective partner would not terminate it once a better logical alternative came along?

The answer is pretty simple. Rather than accept a person who wants to be with you for purely rational reasons, look instead for a partner committed to staying with you because of an emotion that they did not choose to have and, therefore, cannot choose not to have. Ideally, this emotion should not be triggered by anything objective but should strike in mysterious ways, and it should also entail genuine psychological costs in the event of separation, such as an aching heart, sleepless nights, and a profound longing for your absent sweetheart.

There is, of course, just such an emotion- the emotion of romantic love. You won't find many songs, poems and other declarations of love along the lines of "this person meets my minimal standards of acceptable levels of IQ, Beauty and Earning Potential" (even if, on average, such things do determine who we end up with). But you will find no end of romantic references to just how irrational, uncontrollable, and psychologically costly this emotion that one is feeling for somebody can be.

Having said that, we are not all swept off our feet the moment somebody comes along declaring "I can't sleep with you on my mind; you make my heart beat like crazy; no controlling this feeling that has come over me" etc, etc. There's a reason why most of us are actually turned off by somebody who comes on too strong too early. It's because they are

either desperate or prone to becoming infatuated all too easily. Either case should trigger some alarms.

For all these reasons and more, romantic love evolved to be not entirely rational but not entirely impulsive either. As experimental psychologist, Steven Pinker, (b. 1954) said, “the contradiction of courtship- flaunt your desire while playing hard to get- comes from the two parts of romantic love: Setting a minimal standard for candidates in the marketplace and capriciously committing body and soul to one of them”.

Another way to put it would be to say that romantic love does not belong entirely in the sphere of value. You cannot really quantify and put an objective price on such an emotion. But, nor does it belong entirely in the sphere of values along with all those other priceless aspects of human existence either. It's not entirely inaccurate to think of the dating scene as a marketplace, after all.

In short, then, romantic love is one more example of just how complex and contradictory human life is and, therefore, not something that can be reduced to equations as economists often insist it should be. That said, provided they are aware of the limits of their field of inquiry, economists can give us some useful insights into human behaviour, as the deconstruction of romantic love shows. But when the limits of rationality are not taken into consideration, one may, as Ayn Rand found to her cost, end up constructing a perfectly rational philosophy that leads to disastrous results upon meeting real, messy, human behaviour.

Is Morality Objective and Absolute?

Moving on to now to the moralistic part of her philosophy, the very name by which it is known- Objectivism- asserts that there are absolute standards of right and wrong that can be used to judge the morality of our actions. That being the case, it's pretty much as if such absolute moral standards exist in Nature, and it is up to us to get out there and 'discover' them.

But, really, saying we should go forth and 'discover' the One True Moral System is the same flawed thinking as saying we need to get out there and “find the money” before any project we may wish to embark on can be completed.

We can use the concept of 'Fashion' to illustrate the flawed thinking here. It is a crucial part of many of the commodities we produce, and particularly so with clothing. Now, obviously, before we can make clothes we must go forth and find the raw materials required to make our shirts, dresses, shoes, stockings and so on.

It would be wholly inaccurate, however, to suggest that, along with a search of such raw materials as cotton, linen or leather, we also have to get out there and find the 'Fashion' that makes, say, a certain brand of handbag so much more covetous than your average handbag. This is because, just like with 'Money' and 'Morality', 'Fashion' is not a material thing, not something one can obtain by fishing it from the sea or digging it out of the ground or harvesting it from crops. Fashion, like Money and Morality, is a relational and intersubjective concept. To the extent that it exists at all, it exists in our minds.

Now, to be fair to Ayn Rand, it needs to be said that she did understand that money is more relational than material. We have spoken before of the powerful ideas she included in her stories that have really inspired people, and one particularly notable example would be a long speech given in 'Atlas Shrugged' by a character called Francis D'anconia. He overhears one of the true villains of the story repeat the saying "money is the root of all evil", and it prompts him to ask if anyone knows what the root of money itself is.

"Money", he says, "is the material shape of the principle that men who wish to deal with one another must deal by trade and give value for value...when you accept money in payment of your effort, you do so only on the conviction that you will exchange it for the product of the effort of others...Try to grow a seed of wheat without the knowledge left to you by men who had to discover it for the first time...and you'll learn that man's mind is the root of all the goods produced and all of the wealth that has ever existed on Earth".

Ayn Rand, through the character of D'Anconia, goes on to say a lot more about the fundamentally inter-relational nature of money, but I think we get the gist of her argument here. To the extent that money exists and can serve its purpose, it takes the form of the measure of credence we can give to another's claim to be producing value (just as they are measuring our own claims). Credit/Money is that relationship that forms whenever people work together to the best of their ability and are justly compensated for the mental and physical efforts they make.

We might say, then, that there is a moral as well as a material aspect to money. It exists in the sphere of values as well as the sphere of value.

Now, in the fictional world in which Ayn Rand set her story, the 'Value' and 'Values' aspect of money can function perfectly well (were it not for the interference from those meddling governmental bureaucrats). You can tell who are those people who have discovered absolute moral standards because it is stamped onto their fine features and evident in the brightness of their eyes. Also, those moral supermen/ women can calculate, instantly, the value of everyone's capacity to work. If reality really worked like this, it would be relatively easy to maintain a monetary system that facilitated wealth creation and selected against fraudsters and cheats.

Also, while Rand was correct in saying money has its roots in relationships much more than anything material, she brushes over the other crucial aspect of money- debt- and how it really came to be. The details of this story must wait for future books in this series, but basically debt is a peculiar kind of obligation. As Rand said, humans are social animals that have always been doing favours for each other and have (intentionally or accidentally) done ill towards their human family, too. In either case, we have this sense of imbalance, of a favour not yet reciprocated or a hurt left uncompensated, and justice demands balance be restored.

What is peculiar about debt is that it is quantifiable and impersonal, and this latter quality makes it transferable. The only important thing is that a debt is paid back. It matters not who actually pays back what is owed.

But most favours and obligations do not really work in this way. If somebody does us a good turn we normally settle for a vague sense of when that favour is returned, rather than bother to precisely calculate what is owed. Indeed, there are many aspects of social life where to even attempt to make such a calculation would be considered offensive.

As for that impersonal/transferable aspect of debt, when we are wronged we might well think that some individual should repay the debt their guilt represents, and become exacting in just how much compensation is owed, but we would not call it 'Justice' if just anybody was fined or locked up. We'd call that scapegoating.

I think it's fair to say that most people would regard the ability to transfer guilt onto others and have them serve time rather than the actual perpetrator, as a travesty of justice. But, debt is not only a quantified obligation, in that we do bother to calculate precisely what is owed, it's also impersonal and therefore transferable. We have plenty of historical examples of, say, a father ending up in debt and his daughters being made to work in the creditor's household until the father's debt is paid back, even though they themselves never borrowed any money.

What did it take to transform obligations and favours into something quantifiable, impersonal and transferable- in other words, into Debt, the root of money? It took a combination of mathematics and violence. Ayn Rand's essay on money's roots seem to be based more on the mythstake of money as something that evolved from friendly swaps of material commodities, but its actual roots were nothing like this but something far more sinister.

If money is to exist at all, it's necessary to carry out that quantification that calculates, precisely, what is owed. Now, Rand's Objectivist philosophy insists that we ought to be able to apply such calculations not only to the material aspects of our actions but the moral ones too. If that was indeed possible, then, in some sense, morals would exist in Nature, waiting for us to discover them.

But, as Michael Shermer (b. 1945) pointed out, that's not really true at all. Morals do not exist in nature, only actions do. Roughly speaking, there are three types of action- physical action, biological action and human action. None of them are, in and of themselves, "moral". It is true that, by engaging in such actions (or through avoiding them) we may increase or decrease our psychological well-being. We may end up happier or sadder. But these are subjective states and are therefore personal rather than objective. The actions that caused those subjective states become moral actions only when someone else judges them to be moral actions. In other words, there is no "morality" in nature for us to "discover". "Morality" is a human creation, as susceptible to cultural influences and social constructions as any other human creation, such as Art, Fashion and Religion.

Here we should recall just what it is that distinguishes anything properly belonging in the sphere of values from anything belonging in the sphere of value. A thing, whether material or not, has value if it can be compared precisely to any other thing. In other words, it has a price. Anything belonging in the sphere of values, though, is valuable precisely because it cannot be compared to anything else. That's why we say such values are "priceless". It's just silly to ask how many chocolate cheesecakes are equivalent to the crime of murdering a

child or running into a burning building to save a puppy. Human life is full of good and bad actions that we do not bother to quantify because it would be absurd to do so.

One of the more obvious ways in which this is the case can be seen in the way you can take all the claims of what constitutes “right” and “wrong” actions that individuals and groups have made throughout history. It will be observed that, invariably, they all disagree to a greater or lesser extent. The only reasonable conclusion to be drawn from this messy complexity is that they cannot all be right.

Nor should we fall for the belief that all of them are wrong, save for one, which is absolutely right. As Shermer said, “just as there is no absolute right type of human music, there is no absolute right type of human action. The broad range of human action precludes pigeonholing into unambiguous rights and wrongs that political laws and moral codes tend to require”.

So, what, anything goes? No, of course not. We humans have always organised that which belongs in the sphere of values into hierarchies of goodness. Not all fashion is equally good. Some of it is priceless, a lot of it is rubbish, and we don’t all agree on what is rubbish and what deserves our eternal respect and admiration. All such hierarchies of likes/dislikes provide the standards by which we judge the consequences of our actions, and morality should be included among that which can be judged in this way. But, we should not forget that all such standards are, themselves, human creations. Ayn Rand forgot this, and so she couldn’t see that there was nothing “objective” about Objectivism, and that it was dangerous to suppose she had found absolute moral standards, or how to discover them.

Dangerous how? Well, because, as Michael Shermer puts it, “as long as it is understood that morality is a human construction influenced by human cultures, one can be more tolerant of other human belief systems and thus other humans. But as soon as one group sets itself up as the final moral arbiter of other people’s actions, especially when its members believe they have discovered absolute standards of right and wrong, it marks the beginning of the end of tolerance, and thus reason and rationality”.

That was not a lesson that Rand and her followers learned, and it was this failure to learn that, however necessary it may be to organise values into hierarchies of good and bad, there are no absolute standards in reality, that resulted in her rational philosophical movement transforming into a cult.

Ayn Rand herself died in 1982, by which time the cult that The Collective had become had already fallen apart. Her ideas, though, lived on, just as ready to bewitch those who failed to see the flaws that made them cultish. So we can add the philosophy of Ayn Rand to the flawed assumptions of the cyberneticians and ecologists; other flawed beliefs lurking in the foundations of the world we were creating.

CHAPTER SIX

A few chapters ago, we saw how the Californian Ideology set about networking computing devices, therefore laying down the foundations of what would become the world-wide web. By 1997 the Web was well and truly established, and the American political system was very much in the grip of financiers who had a vision of how the world ought to function.

This vision was one of the world as one giant economic system, and if it was to be a stable global system, it was clear to these ideologues what needed to happen: Nations should open themselves up to the free flow of capital. In order to convince the world that this was the right thing to do, a demonstration of the benefits that would result was needed. To bring about such a demonstration, it was necessary to find a kind of laboratory where such economic ideas could be tried out

Such a 'laboratory' was found, in the form of Southeast Asia. After having come under pressure from the USA, countries like Thailand and South Korea had given up all restrictions and Western capital began pouring into this part of the world. By 1997 this had had such a transformational effect, the result was proclaimed "the Asian Miracle".

But was it a positive outcome? It certainly looked that way. The public accounts of South Korea and Southeast Asian countries appeared to be in order, and there had been high levels of economic growth going on for years. Not only was economic growth high, so too were levels of saving and investment. Inflation, on the other hand, was not growing but kept under control.

All in all, then, it looked very much like there was no better place to do business than Southeast Asia in 1997. The major players in the world of finance and banking certainly thought so, because investment banks, commercial banks and hedge funds were all mightily keen to get in on the act and seize the opportunities that this "Asian Miracle" had opened up. As a result, there were enormous inflows of capital being registered year after year, which had nothing but a positive effect on the feeling of prosperity. The stock markets were on the rise, the price of real-estate assets were increasing in value, too, and there was enough money in the economy to fund all kinds of projects. Even the countries' governments had fiscal surpluses. In 1997, things could not have seemed better for the future of Southeast Asia.

And yet, despite all these apparent reasons for optimism, the models that underpinned this period of growth had flaws. Imbalances would develop and grow with too few people realising this was happening, and in 1997 the whole system would blow up in a major financial crisis.

The Rise of Southeast Asia

The story of Southeast Asia's rapid rise and almighty fall really began in the early 90s, a time that was not all that good, economically speaking, for the USA. That decade started with a mild economic crisis in the USA, leading to a recession in 1991. This, you may recall, had prompted Alan Greenspan to persuade President Clinton to cut government spending.

Something else it caused the Federal Reserve to do was to lower interest rates, and as a result those rates fell well below the rates that existed in southeast Asian countries.

The likes of Thailand and South Korea had already been registering high rates of economic growth, so once the interest rates changed in the way they did, that only increased the incentives for international capital to flow to this part of the world. As it did so, that capital became added to the savings reserves of these countries, which were very high to begin with.

The economies of Southeast Asia were definitely booming in the 1990s, but in 1997 it all came crashing down. Whenever a crash happens, a question inevitably arises: why did nobody see that the boom that preceded the crash was simply not sustainable?

In the case of the "Asian Miracle", there actually was a group in the White House who did see that there was a financial bubble forming in Southeast Asia. They were the Council of Economic Advisers and they were led by Joseph Stiglitz.

The concern that this group had was that much of the money the west was pouring into Southeast Asia wasn't really being invested in anything sustainable or likely to really increase wealth, but was instead being used to grow a speculative bubble in property. Once it burst (as it surely would) the flow of capital would quickly reverse as investors rushed to get their money out of the country. That would spell disaster for the citizens of those countries.

So Stiglitz and the Council of Economic Advisers had a pretty sensible suggestion to put to President Clinton, which was to persuade him to put a stop to the more excessive short-term speculation. Unfortunately, the Council found it nigh on impossible to actually deliver their recommendations to the President. Stiglitz had a pretty strong suspicion as to what, or rather who, was frustrating their efforts.

In the Clinton Administration, the position of Secretary of the Treasury was held by Robert Rubin (b. 1938). As was typical in the age of Total Bureaucratization/ marketisation (see Book 3), he had gone through the revolving door between the financial sector and the political sector, having previously headed the investment bank Goldman Sachs. During his time there, Goldman had created many of the computer models that underpinned the Asian Miracle.

What drove Rubin was a revolutionary vision of the world, one which saw it as one big system that was completely open to the free flow of capital. This meant he was the sort of person likely to prevent the warnings of Stiglitz from reaching the President. Rubin and the Treasury team were agents of the financial world, Stiglitz believed, embedded in the heart of government, and thus perfectly placed to conspire to prevent anything from altering the course that the world economy was set on.

Cyberspace: Digital Utopia?

Joseph Stiglitz and the Council of Economic Advisers were not the only ones that were looking at the way things were developing and seeing reasons not to be unconditionally

optimistic. Others, casting a critical eye over the way the Web was evolving, saw reasons to be cautious too. What the Californian Ideology had promised was a new kind of democracy. In 'Atlas Shrugged', the heroes of the tale had all escaped to a secret, hidden valley where they had been free to build a society with no interference from any government. The dream that the Californian Ideologues wanted to sell was that now, thanks to the Internet, such a place existed. It was Cyberspace.

This vision of Cyberspace as the new "land of the free and home of the brave" was perhaps best expressed by John Perry Barlow (1947-2018) in his 'Declaration of the Independence of Cyberspace'. "Governments of the world", it began, "you are not welcome among us. You have no sovereignty where we gather". A bit further on, Barlow insists that "we are forming our own social contract. This governance will arise according to the conditions of our world, not yours. Our world is different".

Different how? "Cyberspace consists of transactions, relationships and thought itself, arrayed like a standing wave in the web of our communications. Ours is a world both everywhere and nowhere. We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force or station of birth...where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity.

"Your legal concepts of property, expression, identity, movement and context do not apply to us", the Declaration insisted. "They are all based on matter, and there is no matter here".

That was the positive, Utopian view of the Web that existed in 1996 (the year the Declaration of the Independence of Cyberspace was posted online). Thanks to computer networks and the falling price of information- and communications technologies, a powerful way of distributing information and thus, of sharing ideas now existed, and that could only lead to a new kind of Democracy, greater than any that had come before.

But was the World Wide Web really a new and more perfect form of democracy or something else? Some of the computer utopians had growing doubts that everything was as rosy as Barlow was making it out to be. The global systems that the computer networks had enabled had actually done something other than distribute power and set all citizens of cyberspace free. Instead, these skeptics thought, the web had shifted power and allowed it to become more concentrated than ever before. What the optimists were celebrating as a new democracy and era of unprecedented freedom for the individual was, really, a system in which power was exercised over the individual.

One person who really spoke up for this cautionary view was 'Humdog'. That was the online name of one Carmen Hermisolla. Hailing from the West coast of the USA where the Californian Ideology had been born, she had been one of the earliest believers in this idea of cyberspace as a new community of free individuals. So when she posted an attack on that very idea, it caused a sensation online.

Her argument was that it was not at all accurate to say that, in Cyberspace, one was free to express themselves in any way they wished and that it was a virtual space which allowed full

and unfettered expressions of individuality. It might seem that this was what the web enabled but, she insisted, appearances were deceptive.

“I have seen many people spill out their emotions, their guts, online, and I did so myself, until I began to see I had commodified myself”, she wrote. In other words, what Cyberspace had actually enabled was not freedom at all, but a new form of commodification. In the 19th century it had been materials, energy and, above all, labour-power, that had been commodified. But now, by posting their inner thoughts to the likes of CompuServe or AOL, people were, effectively, commodifying their very selves.

“Cyberspace is a black hole”, she wrote. “It absorbs energy and personality and then re-presents it as an emotional spectacle. It is done by businesses that commodify human interaction and emotion. And we are getting lost in the spectacle”.

CHAPTER SEVEN

In the previous chapter, we saw how conditions came about that led to a tremendous boom in the economies of Southeast Asia. We also saw how, while most showed no concern over how sustainable such growth was, a few were noticing some flaws that could cause a lot of harm if left unaddressed.

The Flaw in Ecology Laid Bare

This relatively small group of skeptics would no doubt have been very interested to learn that, by the 1990s, the ecological assumptions that modern society had been built on- the idea that natural systems maintain equilibrium through feedback and that market systems ought therefore to be capable of behaving in the same way- had been completely discredited. Nor was this a particularly new realisation. Such knowledge had in fact come to light in the mid-1970s and by the mid-80s the idea of a stable balance to Nature had been completely overturned.

Such a turn of events would have come to a shock to the ecological movement of the 70s and 80s, because this concept of the “balance of nature” was firmly entrenched. As the ecologist Stewart Pickett (b 1950) said, “ecologists really thought that we were dealing with a stable world... You didn’t question it at all”.

There may have been no doubt that a tendency toward equilibrium was the name of the game in ecology, but nevertheless ecologists were still getting out there and gathering evidence, so it’s not as if the scientific process had stopped entirely. One such ecologist was Daniel Botkin, who chose Ile Royal as his site of study. It was a remote island out in the Great Lakes, and it was home to a population of moose and wolves.

What Botkin had expected to find was a textbook example of equilibrium. A study of the populations of moose and wolves should have led to the conclusion that these two populations maintained a steady balance. “In theory the wolves controlled the moose, and the moose and the wolves and vegetation all lived together in this miraculous system”. The whole point of his field trip in Ile Royal was to figure out how this miraculous balance was actually being maintained.

But, once he got there and started to seriously study the natural history of the island, the results were not at all what was expected. “Everything was always changing”, he remarked, “it wasn’t what it was supposed to be. When you looked at the populations of the moose and wolves, you saw nothing but change”.

Now, what might somebody who really wants to believe in the “balance of nature” do when faced with results like that? One response would be to remind themselves that nature only tends toward balance, which is not to say that natural systems are always in equilibrium. So, figuring that the moose and wolf populations were in a temporary state of fluctuation due to who knew what, Botkin embarked on an even deeper study of Ile Royal’s natural history, examining the soil and vegetation for clues scientists with his expertise are trained to recognise, and as a result of this work centuries of Ile Royal’s history was uncovered. The results? The same as before: Nothing but change.

Nor was Dr Botkin alone in obtaining such contradictory results. His work encouraged a new generation of ecologists to undertake a deeper analysis of the world's ecosystems. According to the predominant theory, any disturbance caused by floods, fire, storms or whatever would result in feedback loop mechanisms kicking in, and returning those ecosystems to their original balanced state. But study after study was bringing in results that showed this just wasn't true.

As Dr Pickett explained, "you get a disturbance, the forest doesn't come back the way it was. Disturbance comes along and it resets the system to something new".

Such findings were a profound challenge to the ecology movement's most basic assumption, which was that natural systems were ruled by what Tansley had called "the great universal law of equilibrium". These latest studies were finding no evidence that such a law existed, and plenty that contradicted it. Given that the "balance of nature" had been a deeply held belief within the ecology movement, one might expect dismay to be felt as this idea fell apart. According to Dr Pickett, that's what happened.

"When people began to find out that [the "balance of nature"] might not be right, people were really almost viscerally upset....because it offended that very comfortable idea that Nature was stable".

Even scientists are prone to clinging to deeply held beliefs, especially when there seems to be reason to hope that, in the end, they'll turn out to have been true all along. And, as these results were coming in, there still was some hope for true believers in "the great universal law of equilibrium" to cling to.

This hope came in the form of one George Van Dyne (1933-1981), an ecologist who undertook the ambitious project to create a computer model of Colorado's vast grasslands. Just like Dr Botkin, Van Dyne and his team took on this project with the intention of showing how this ecosystem maintained stability.

In order to be able to do this, the necessary data first had to be gathered. To that end, Van Dyne hired dozens of researchers who were given the unenviable task of conducting painstakingly focused studies. One team's job was to push a vacuum cleaner-like contraption around hundreds of square miles of grassland, and then open up the insects and small mammals it hoovered up so as to determine exactly what they were eating. Another team member, equipped with a dictaphone, followed a pronghorn (a species of antelope) and recoded every bite of vegetation the animal took. "One bite of blue grama; six bites of kosha without flower..." The research team even went as far as putting a hole in the side of a bison, so they could reach in, pull out the contents of its stomach and examine it under a microscope.

Once enough data was gathered, Van Dyne used it to construct a vast and intricate computer model that simulated the interactions going on amongst the flora and fauna of Colorado's grasslands. As fellow Dr Dave Swift (1941-2020) explained, "Every species had its own sub-model that then was linked through feedback loops to other species and their sub-models. This grasshopper sub-model tells us what's going on with grasshoppers...there

was another model for birds, for small mammals and other potential predators of grasshoppers...That sub-model then feeds that information to this sub-model...to predict the death rate of grasshopper eggs for that day”.

All this vast, intricate and interconnected data was fed into Van Dyne’s computer model, and it was then launched to see what results it would return. Again, it was not the outcome that was expected. No stable, underlying pattern emerged.

Still not ready to abandon the dream of a balance of nature, Van Dyne decided that the problem was lack of data, and so he and his team worked even harder, sometimes all through the night, feeding more and more information into the model. But that did not correct the problem; it just made it worse.

If we return to the work of Howard and Eugene Odum, it should become obvious why the “Colorado Experiment” could never have returned the expected results. They, you will recall, had written ‘The Fundamentals of Ecology’, the Bible of the movement, that apparently showed how natural systems stabilise themselves.

But they had begun with the assumption that natural systems had to tend toward equilibrium, and then had set about ruthlessly simplifying Nature so that it could fit their equations. In feeding great masses of data into his model, Van Dyne was not creating a fantasy of natural stability (as the Odums had actually done) but rather reproduced the chaotic instability that actually exists in Nature. Far from confirming that ecosystems, via feedback loops, follow “the great universal law of equilibrium”, Van Dyne’s efforts actually spelled the end of the systems theory that had reigned for some fifty years.

According to Dr Stewart Pickett, “the balance of nature is an illusion and we hold onto it so tightly in our culture. That is so completely counter to what contemporary ecology tells us...we live in a very dynamic world. We have to replace that assumption of the balance of nature. You have to discard the myth”.

Perhaps he should have said, “you have to discard the mythstake”, because by now the “balance of nature” idea had clearly suffered the same fate as the belief that money’s origins lie in barter. In both cases, people went out into the real world with the intention of showing how such ideas worked in practice, and all they ended up doing was showing there was actually very little evidence backing such ideas, and a great deal of evidence showing they could not possibly be true. Nevertheless, such ideas, refuted though they were, continued to hold a dominant position in popular imagination. The dream of the self-organising system was just too appealing to let go, and so we clung to it and ignored the fact that the theory underlying it had been completely overturned.

Nor were these falsifying results restricted to ecosystems with the dream of self-correcting markets left untouched. For, as Harvard researcher Jonathon Scheffler explained:

“Beginning in the 1870s, theorists sought to build a model of the invisible hand. They wanted to show how market trading among individuals, pursuing self-interest, and firms maximising profit, would lead an economy to a stable and optimal equilibrium. Those theorists never succeeded. Quite the contrary: in the early 1970s, after a century of work, they concluded

that no mechanisms can be shown to lead decentralised markets toward equilibrium, unless you make assumptions that they themselves regarded as utterly implausible”.

So, by the 1970s and certainly by the 80s, the idea that ecosystems and markets should be self-correcting and capable of maintaining a balanced state had been exposed as total falsehoods. But the Asian Miracle had come about because powerful people still had faith in such concepts, and they were preventing those aware of the fundamental flaws from warning the President with the hope that would change current strategies. And so, the Southeast Asian bubble kept growing.

CHAPTER EIGHT

Let's now return to the 1990s and the rise of Southeast Asia's financial sector. What really started this ascendancy was the Thai government's response to all the capital that was flooding into the country in 1993. It was decided that the best thing to do would be to transform the capital, Bangkok, into an international financial centre capable of competing with Hong Kong and Singapore.

The Dream

But how could such a transformation be brought about? Well, there was a tried and tested method for turning a capital into a finance-friendly environment, and the Thai government stuck to this formula. Regulations in the capital market were changed in a way bankers and financiers would like, tax incentives were introduced, and the government promoted the creation of a whole financial industry.

What resulted from all this was Bangkok's transformation into a financial centre that specialised in foreign lending operations, which basically involves borrowing capital, nominated in international currencies, and then channelling it into all manner of investment projects in local currency.

This specialisation turned Bangkok into one of the great gateways to the economies of Southeast Asia. But there were troubling signs right from the start, had anyone cared to look. What Bangkok actually had was a financial centre with little expertise in that field and, furthermore, this novice financier had ineffective regulations overseeing its operations.

And what those operations were doing, was taking the money that was pouring into the country and investing it (if that is the right word) in projects, many of which had little chance of ever being profitable.

This all seemed crystal clear after the crisis that was to come. Post collapse, the IMF found that between fifteen and twenty-four percent of loans were in what is known as an "erratic situation". That means that not only did this "great financial centre" have trouble repaying its debts, it could not even keep up with the interest payments that came with those loans.

Now, default rates of twenty-four percent should have been high enough to cause serious concern, if not alarm, among analysts. So why weren't financial analysts sending out warnings before things got as bad as they did?

Well, as we know by now, banking and finance just loves to hide its scams through book fiddling and lack of transparency. The figures that would have raised alarms had they been in plain sight for all to see did not appear in the banks' annual accounts. A combination of weak financial rules, poor supervision and lack of experience resulted in loans in an irregular situation being refinanced without being classified as dubious, so on paper things looked good.

But what about the difficulty of repaying interest (let alone the debt itself)? Well, remember, that the big boys in Capitalism get to treat debt in ways that are different to the rest of us.

They get to treat loans like gifts that are not seriously intended to be repaid. So, not only were the books fiddled to make it seem like lost interest payments had been accounted for, these companies that were getting deeper and deeper into financial trouble were lent even more money, not to invest in anything but just to pay off the interest they already owed on previous loans.

In other words, for a time, Thailand got to live the dream of the ultra-wealthy; of being able to treat debt as inconsequential. To live such a dream is to seem to have money for everything which, in a way, you do. After all, money is relational, a creation of interpersonal belief. Western capital was pouring into this region, the price of assets was going up and up, and all kinds of investments were being funded. But the export industry had created a huge overcapacity, and what that resulted in was a great deal of property investment and public works with scant chance of ever being profitable. But, so long as the capital kept coming and the books were suitably fiddled, the dream could continue.

The Wake-up

Of course, like all bubbles, this one could not keep inflating forever. The dream started to dissolve away once the United States began to recover from its recession. Noticing recovery was happening, the then Federal Reserve chairman, Alan Greenspan, raised US interest rates. Since it was low interest rates that made Southeast Asia seem like such a great place to redirect capital, Greenspan's move meant the region looked a great deal less attractive.

Also, raising interest rates in the US led to an appreciation of the dollar. Not only did the dollar appreciate, so too, inevitably, did the currencies of all the Southeast Asian countries that were pegged to the dollar by a fixed exchange rate. That was not a bad arrangement per se. Indeed, this was what made these countries seem so attractive to foreign investors. But the appreciation of the dollar and of the currencies pegged to it with respect to other major currencies like the Yuen, meant places like Thailand lost their competitiveness.

Speaking of the Yuen, in 1994 China devalued its currency by more than thirty percent. This resulted in export growth to Southeast Asia dramatically slowing down. Consequently, the export sector, which suffered from overcapacity to begin with, became even more imbalanced, and what that did was to make projects of dubious quality seem even less viable.

And still that influx of capital kept coming. This, combined with the loss of export momentum, had a dire effect on Thailand's current account balance, namely the difference between income and payments to the world, registering huge deficit levels.

This growing deficit level had been financed through foreign debt. By 1996, that foreign debt had grown to 165% of the countries' GDP. That was a very precarious state to be in, like a Jenga Tower of bad debts that only needs a slight nudge to send it toppling. On the 2nd of July, 1997, that nudge happened.

During the Dreamtime, the dubious methods outlined above boosted on-paper profits, saw financial institutions distribute dividends and give away huge bonuses. They even managed to pay their taxes. A fun party, no doubt, but one that was financed with more and more debt.

But that was OK, because Southeast Asia was in the elite club that gets to treat loans more like gifts than debts.

Until, that is, on July 1997, when Thailand was suddenly out of that club. Now, just like the rest of us, those loans were treated as debts, debts that the foreign investors now insisted had to be repaid. So, whereas before Thailand got to pretend like it all had all the money in the world, now it was obliged to behave like it had hardly any money at all. The country, which hitherto had specialised in raising capital from the rest of the world, now found, between, March and June 1997, that it had to secretly create money in its central bank so as to provide liquidity to the country's financial institutions at bargain interest rates.

That move could only last for as long as Thailand could pretend to have international reserves. But it could not keep up that pretence for much longer, and soon they had to pretend that those international reserves had been consumed.

Then, on the 2nd of July 1997, the Thai government was forced to make an announcement. The fixed parity of the Baht (Thailand's currency) would no longer be pegged to the dollar. Whereas before they got to pretend that Thailand's currency was backed by the currency of the most powerful nation on Earth, now they had to pretend that it was backed by nothing at all.

As you can imagine, all those hundreds of thousands of apartments and offices that had been built became completely unaffordable. Nobody wanted them, and so the developers went bust and defaulted on their loans. As a result, the thing that Stiglitz warned would happen did happen. Wild optimism among Western investors turned into panic, and they rushed to get their money out of the country.

In 'material' terms, bringing about the end of the association of the dollar was akin to removing a structurally vital component of the Jenga tower of debt that the Baht had become, and so the structure collapsed. In relational, interpersonal terms (that are, arguably, closer to money's true nature) a currency which was once imagined to have immense value was now imagined to have none at all.

However you care to think about the results, the consequences were the same. It did nothing to improve Thailand's situation; indeed, it had the opposite effect. The reason why was because, although the Baht was no longer pegged to the dollar, the banks that held what was now being treated as debt had taken out loans in dollars. To be more precise, its liability was denominated in dollars and its assets in local currency. The creditors to whom this debt was owed insisted on being repaid in dollars and certainly not in the now worthless Baht. But the default was just too big and Thailand could no longer pretend it had the ways and means to cover its debts.

What happens in Vegas stays in Vegas, so the saying goes. But once the Thai financial bubble burst and the collapse began, the crisis did not stay confined to that one country. Rather, the panic spread. South Korea was the next country to be affected. Its citizens did what they could to prevent disaster. Korean housewives queued to give whatever spare dollars they had to the government in order to rescue the country. But, as you can imagine, this was a pathetic gesture, given the scale of the crisis that was unfolding.

Then, another creditor stepped in, offering assistance, one immensely more powerful than a collective of Korean housewives. It was the IMF. The organisation sent teams to South Korea and Southeast Asia, teams that brought enough dollars to rescue the countries and stabilise their stricken economies.

Not that they handed out this money without expecting something in return. That something was pretty much the conditions attached to the money the IMF had lent to Russia. South Korea was told that the crisis had happened because Asian countries were not Western enough. The loans would only be granted if those economies promised to turn themselves into models of the free market. This would involve cutting government spending and getting rid of nepotism and corruption among the countries' ruling elites.

Of course, corruption and nepotism are the sort of practices one would want a country to be rid of. But in this case the countries in question were made to take their medicine no matter what the cost. What happened in Indonesia is a prime example of what that meant.

At the time, Indonesia was under the rule of President Suharto (1921-2008). Actually, "Dictator" would have been a more appropriate title for him. He had led Indonesia as an authoritarian regime since 1967, and for thirty-one years he had headed what many considered as one of the most brutal regimes of the 20th century. It was also a regime rife with corruption. President Suharto had surrounded himself with a clique of advisers and family members, and so Suharto might well have looked like one of those leaders who, unfortunately, is too well protected to ever be ejected from Office.

But then, he made a fatal error, which was to refuse to do what the IMF wanted. This refusal prompted the IMF to turn to Robert Rubin who, at that time, was the Secretary of the Treasury in the Clinton Administration. By now it was clear that a financial crisis was rapidly developing in Southeast Asia, and Rubin and the Treasury team believed it was a crisis that could not be solved unless Suharto was either forced to bend to the will of international financiers, or his regime was overturned.

We saw earlier how Ayn Rand's cult of personality had been undone (at least in part) by an affair. The Clinton Administration was no cult of personality, of course, but it too was brought down because its leader had an affair. With Clinton distracted by the crisis that was developing over his affair with Monica Lewinsky (b.1973), more and more power was being passed to Rubin and the Treasury team, until it was effectively they who were running America's foreign policy. Above all, they judged everything by asking "does this constitute a threat to the global economic system?". In Suharto's case, it was decided the answer was "yes".

Western banks therefore decided to remove subsidies from Indonesia. As a result, prices in the country soared and, within a matter of months, economic output fell by 14% and 15% of the male workforce lost their jobs. It was a dire economic situation, one which forced Suharto to give in to the IMF's demands.

And so, in January 1998, while being watched over by its head, Michael Camdessus (b 1933), Suharto signed the IMF's agreement. With that done, Indonesia received the massive loan which was intended to stabilise its troubled economy.

Rescuing the Capitalists

Did it succeed? Yes, but only for a moment. But then something happened which seemed very strange indeed. Indonesia's exchange rate underwent a disastrous crash, and this event resulted in its economy going into free fall.

A strange coincidence? Had it been only Indonesia that suffered this fate after having received a massive loan, one might believe so. But such a fate was not Indonesia's alone. Every country that the IMF bailed out suffered the same consequences: Momentary stability followed by a collapse of the exchange rate and a ruined economy.

Clearly it wasn't just a coincidence, as the same thing was happening again and again. But why? Rubin and the Treasury team had critics in the White House who believed the reason things turned out this way was because there was a greater agenda behind these bailouts.

Officially, the bailouts had been intended to bring about economic stability. The critics, though, argued that they were intended, above all else, to rescue the Western investors who had helped inflate the speculative bubble in Southeast Asia. Support for such an argument could be seen in the way many of those same dollars were immediately used to pay off Western investors who wanted to get their money out of the troubled countries.

The money was fleeing, but not the debt from which money is always created. Having bailed out Western investors, the unfortunate citizens of those countries were left even deeper in debt, because now the taxpayer of those crippled countries had to repay the IMF. That meant massive cuts to State funding and a catastrophic economic crash which, by 1998, had forced millions back into the poverty they hoped would never return.

Why had Clinton become President? Because he brought with him a vision, a vision of using political power to transform America. But, once he became President, he heeded advice from the likes of Rand's disciple, Alan Greenspan, and instead gave away much of that power to the financial markets.

It was not supposed to be a surrender, but rather a trade. The deal was that, with their new powers these markets would deliver a new form of stability and a new form of democracy, one free at last from the corruption of elite politics.

Warnings Ignored

What happened in Southeast Asia should have been a warning, a dark foreshadowing of the 2008 crash. Why? Because it showed that, in reality, there had been no transformation of power, only a transference of power from one elite to another. We have seen again and again how easy it is to move back and forth between Total Marketisation and Total Bureaucratisation (see Book 3), and what happened during the time of the Southeast Asian

bubble is another example, because political power was transferred to the financiers of Wall Street.

What did they do with that power when faced with a crisis? They used it to rescue themselves. Such a move hardly helped bring stability to the world; instead it was creating a more chaotic and unstable world. As far as the leaders of those Asian countries were concerned, the promise of a new kind of democracy built on market stability was, in actual fact, just as much a corruption of power as anything the likes of Suharto had been guilty of.

It's fair to say, then, that, by the late 90s, the scientific basis for the idea of the self-organising system was completely discredited. The theory behind equilibrium in Nature and self-correcting markets had been shown to be based on deeply flawed assumptions, and the dream of self-correcting markets had turned into a disaster for Russia and Southeast Asia.

But such failure did not seem to do much to prevent the growth of the idealistic vision of the self-organising system. It was one of those beliefs that appeals, regardless of whether or not there is any evidence to support it. As we have seen, there is in fact little credible evidence behind the theory, but the political and social situation of the time was one that encouraged its adoption. According to documentary maker Adam Curtis, "the reason was that, in an age of mass democracy where the individual was sacrosanct and politics discredited and distrusted, it offered the promise of a new egalitarian world order".

A Sign of Hope?

A promise, yes, but surely a false one? Hadn't the situation in Southeast Asia shown, yet again, that self-correcting markets could not work in the real world (at least, not without causing catastrophic social harm)?

But then, near the start of the next Century, events happened that seemed to give good cause for re-awakening dreams of self-organising networks. This began in 2003 with a wave of revolutions that swept through Asia and Europe. The capitals of such countries as Georgia, Kyrgyzstan and the Ukraine were flooded with angry crowds that forced the corrupt leadership from power.

Who, though, was leading these revolutionaries? When journalists looked into the causes behind such movements, they found that, in each case, there was no leader. What had happened instead was that the Internet had brought these people together. There was no guiding ideology uniting them, other than a desire for self-determination and freedom.

Soon a belief developed, one that saw these revolutionary moments as the realisation of the hope that Californian computer utopians had held since the 60s. They, you will recall, had been driven by the belief that, once personal computers were interconnected into a global network, the experimental communes could be expanded, thereby bringing about decentralised societies built on a global scale.

Now, finally, in the 21st century and the rise of social media and even more 'personal' devices in the form of smartphones, that vision seemed to be coming true. When, in 2009,

Twitter and Facebook played a key role in organising protests, Al Gore (b. 1948), former vice-President of the USA, was convinced that it represented something exciting and new. “There was a lot of excitement in the ability of individuals in Iran to connect with a global audience and with their peers in Iran to build a political consciousness in support of democracy”, he reckoned. “It represents the emergence of a completely new information ecosystem”.

The dream of the self-organising network was alive once more. Would it finally deliver on its promise of a new and better form of democratic power? In 2008 the world got the answer to that question, and the way was paved for the strange world we now find ourselves in.

CHAPTER NINE

What with Southeast Asia in economic ruin and the cult of Ayn Rand dwindled to pretty much nothing, one would be forgiven for thinking that neither would play much of a role in our story from now on.

But such thinking is wrong. In the late 20th/early 21st century, both Asia and Ayn Rand would, in one way or another, have big influences on the world.

The Shadow of Ayn Rand

Take Ayn Rand, for example. In a way, she had an influence on how the USA responded to one of the country's darkest days. On the eleventh of September, 2001, political Islamists driven by a hatred of the radical individualism that Western politics stood for, launched a series of assaults on the USA, the most dramatic of which was crashing passenger jets into the Twin Towers of the World Trade Centre.

A week later, American markets re-opened. It was an anxious time for Wall Street traders. How would markets react to global footage of one of Capitalism's most totemic monuments collapsing into ruin? The answer was not a positive one, because the markets suffered the largest fall in history. And more bad news was to follow because, just two weeks later, it was revealed that vast corporate fraud, such as the Enron scandal, had been going on since the early 90s. Many major corporations had been behaving much like their Southeast Asian counterparts: Hiding their debts, faking their profits, and assisted in these scams by the major accounting firms.

With so much scandal and a very high-impact terrorist attack doing so much physical, social and psychological damage, it must have seemed like only a superhero could save the American economy from collapse. It turned out (at least, apparently so) that there was a heroic figure, ready to take risks that would, so people assumed, rescue the dire situation.

Who was this hero? It was none other than Ayn Rand's loyal disciple, Alan Greenspan. As chairman of the Federal Reserve, he took the dramatic step of repeatedly cutting interest rates. Why did he do that? Because he believed such action would encourage consumers to borrow and spend, and that such activity would stabilise the system.

But there was an enormous risk to this calculation, as economic history showed. Greenspan had cut interest rates to just shy of zero, and that had resulted in a flood of cheap money pouring into the country. Whenever that had happened in the past, it had led to inflation and dangerous instability. Why should this time be any different?

It turned out, though, that things were different this time. As he had hoped, Greenspan's actions led to a consumer boom, the likes of which had not been seen before. But everything remained stable and the dreaded inflation never occurred. Soon, it was being argued that this could only mean the best possible news for believers in free-market Capitalism. Finally, in the 21st century, we had built an economic system that could manage itself without direct political control.

Chinese Mercantilism

But what was not understood was that direct political control was very much responsible for the stability, just not American politics. Thousands of miles away, there was a giant exercise of political power being run by a vast bureaucratic elite. Who were they? Why, none less than the Asian countries led by China. The Southeast Asian bubble had taught Asian rulers that modern corporate Capitalism could put their countries at the mercy of the West and its financial elites, and they were determined that such a fate would not befall them again. And so the Chinese Politburo set about finding a way to manage America.

The system they developed (with the help of the USA's corporate elites) was one that ended a policy that the USA had held since 1789. This was the insistence that essential goods and services should either be produced in America or, if multinationals wanted to offshore the production of critical goods, their operations would have to align with US interests.

All of which sounds like the sort of policy you would want to keep. But not everybody felt that way, because from 1993 onwards various deals were cut that wrecked this system.

Readers with good memories may recall that I said former economic/political practices never completely die out. We have already seen how a form of feudalism is in operation in the top tiers of banking and in the entertainment industry, for example. In between feudalism and capitalism we had mercantilism, which basically entails a breach of price-integrity with the expectation that this will change the way money and opportunity are flowing. This effect is achieved under mercantilism by interest groups within a nation rigging the country's own currency and tax code so that foreign investment is lured away from one's rival countries.

By 1994, China was evidently practicing a form of Mercantilism. For one thing, it had devalued its own currency (the Yuen) by about 60%. Because Chinese currency now had less than half its value, the effect that had on American-made products was to make them look more than twice as expensive the world over. Just as one hopes with mercantile practices, following the devaluation a flood of foreign investments and jobs arrived in China. Among those looking for opportunity in this Communist country (as the West loves to label China) were some of the USA's largest corporations and banks.

Devaluing its currency was not China's only strategy. This was the period in which China got into negotiations with the USA in order to win most favoured nation status. With that deal struck, the USA had to deal with China on the best possible terms. So, not only were there huge tax and currency incentives luring American companies to China once they got there they could rest assured they would receive excellent treatment.

So that's all good? Well no, not exactly. What these policies did was to bring about a huge and unnatural price disparity between the two countries. When an American citizen bought a good made in China, the US government taxed that import at the rate of 2.5%. But what happened in the reverse case in which a Chinese customer bought something made in America? In that case, the Chinese government slapped a 25% tax on the product.

Since the Chinese government charged ten times the tax for American imports, many Chinese people found it made much more sense to choose domestic products over

American imports. Also, because the taxes were so low, US companies saw it made much more sense to run their operations in China and sell the produce to America, rather than manufacture and sell everything within the USA's own borders. So, what US entrepreneurs were doing was investing in Chinese markets, creating jobs in the Chinese economy and stimulating Chinese growth.

Chinese Stability

With the Chinese currency held at a deliberately low rate, exports from this country were cheap and so a flood of Chinese goods were entering America (what also made the products cheap is that the Chinese deliberately turned whole cities into factories dedicated to turning out massive quantities of a particular product, and this ultra-mass production made these commodities very cheap indeed). In paying for these goods, American consumers were causing a flood of dollars to head in the opposite direction.

Now, it's what China did with all that money that explains the real reason for the stability in American markets following Greenspan's move. Rather than spend that money on its own population, what the Chinese politburo did was it immediately lent the money back to America, by buying government bonds. In short, this was a system intended to keep a flood of cheap goods and cheap money flowing into America, and all controlled by the Chinese politburo. That is what had really created the stability, rather than the magic of the market.

The downside of all this was that real jobs would continue to be lost as businesses opened up their factories in China. According to the US Bureau of Labour Statistics, whereas in 2000 some 17.1 million people worked in manufacturing in the US, by 2011 that number had dropped to 11.7 million. Whereas American workers thrown out of lost work were probably finding re-employment in more precarious gig work or maybe bullshit jobs (this likely leading to compensatory purchasing to make up for a loss of meaning in work) the Chinese manufacturing sector was growing enormously.

Still, for a while everyone was happy. Consumers were happy to get lower prices at Wal-mart, and corporations were happy making easy money while having to deal with far less workers' rights. As Stephen Pearlstein of the Washington Post put it, "Americans acquiesced to this off-shoring because it fattened corporate profits, lowered consumer prices, and fit neatly with a free-trade free-market consensus among the economic elite".

Who Benefits?

Eventually, when the negative aspects of this deal became clearer, accusations of China taking jobs from Americans were banded about. But such accusations were based on a misunderstanding. The Chinese politburo had not stolen these jobs; those jobs had gone to China thanks to the choices made by multinational companies.

As Duncan L Hunter (b. 1948) explained, "for practical purposes, many of the multinational corporations have become Chinese corporations. They like the fact that they are subsidised by their new government, which is China, and that they are able to push American products that are made in the US off the shelves".

Thanks to the manipulations of tariffs and the country's currency, the Chinese politburo created a business environment in which having products manufactured in America was no longer the most profitable thing to do. No, the way to big bucks was to behave like a kind of trading pirate. Dylan Ratigan (b1972) put it like this. "America gets the bragging rights for Apple, but China gets ten times the Apple jobs".

Apple got something out of this arrangement too, which was the freedom to run its plants in a place where safety, labour, environmental and consumer protection laws resembled the West in the 19th century. At plants like Foxconn, the working day lasted twelve hours a day and there was no such thing as a weekend. Those long hours were spent doing dreadfully rote, repetitive tasks. The compensation for this work? 75 cents an hour.

US-based multinationals profited from such conditions in various ways and that gave rise to a phenomenon that seemed very appealing to the president of the Dallas Federal Reserve bank. What phenomenon was that? Disinflation. The big names in American industry- such as General Electric, John Deere and Caterpillar, were investing far more in China. The banks of America were lending capital to China, rather than lending to the American people who subsidised them. As the CEO of the Dow Chemical company observed, "US companies- run by patriotic people- are moving offshore at the fastest rate in history".

The reason why the president of the Dallas federal reserve bank found this situation so appealing is because the more real jobs moved to China, where the pay was so low and worker-protection laws all but nonexistent, the more that created an environment in which American workers were weakened politically. After all, if there is a situation in which disgruntled workers would think twice before striking for better conditions and pay, it is one where it is difficult to find another job and where the choice comes down to accepting a pay-cut or reduction in benefits and everyone, workers and bosses alike, knows that's the situation. As Dylan Ratigan (b. 1972) said, "not only do [those businesses] pay Chinese workers extremely low wages but they also build leverage to lower wages and limit the rights of their own employees".

Bad news for workers, yes, but all good from the perspective of capitalists drunk on short-term profits. If more proof were needed that this was the form of globalisation they approved of, that came in March 2006. That was when the Chinese government proposed a new labour law that, if passed, would have led to a moderate improvement of working conditions. Since diverting money away from profit and toward investment in better conditions affected the bottom line in a way they did not like, US-based businesses like Wal-Mart and "do no evil" Google lobbied against the law, and issued threats to run their plants in Pakistan or Thailand (where, presumably, the exploitation could continue) should the hated law be passed.

The Bubble

So, that was the true nature of the global system that kept Western economies stable: One which saw real jobs disappearing as multinational companies took advantage of low wages and weak Union protection in China, and where cheap Chinese goods and money flooded into America. To all intents and purposes, this was much the same system that had led to the Southeast Asian bubble of the 1990s, only what existed in the early 21st century was the

mirror image of that system. Just as before, what resulted was an orgy of lending, aided by that Gospel of Wealth message pumped out by corporations and megachurches, with credit-ratings redefined and redefined again until it seemed there was nobody banks would not lend money to. As in Southeast Asia, much of that borrowed money was used to speculate on property and so, once again, a property bubble began to grow and kept on growing. One economist reckoned, "it is as if a trillion dollars has been recycled to a 3rd world developing economy that exists within America's own borders".

For many people during these giddy times, houses were no longer to be seen as homes in which to raise one's family, but vehicles for investment, somewhat like an ATM machine that dispensed free money. Such attitudes were merely a reasonable response to the effects of Greenspan's move following 9/11. Interest rates had been lowered so that, whereas at the beginning of 2001 banks paid 6.25% interest on the money they borrowed, by the end of that year it was down to 1.75%.

This cut in interest rates had been undertaken because it was feared that the American economy faced collapse following 9/11 and the financial scandals such as Enron. But the economy did not really need propping up, as could be seen by the fact that, within two months of the Twin Towers collapsing, the stock exchange was back at a higher level. Nevertheless, fearful that higher interest rates might halt that rise, the Fed continued to cut interest rates until the benchmark rate was just 1%.

It stayed at 1% for a year, and even when the economy was booming, the interest rate only crept up by tiny amounts. What all this resulted in was a situation in which, for two and a half years, borrowers found that inflation reduced the value of their loans by more than the total cost of interest. No wonder so many people got suckered into property speculation; these were times when borrowing was not just free, you were effectively being paid to borrow. And while short-term loans stayed low, long-term rates, being affected by other factors, never dropped lower than 3.5%. Therefore, one found oneself in a particularly profitable position if one took out short-term loans and lent the money long-term.

Sure, it was a position that came with risks. The people who issued that short-term loan could have decided, all of a sudden, that they wanted their money back. They could also decide that, this time, they would not renew the short-term loan. Both scenarios would spell disaster for anyone who had passed that money on to others, promising no repayments would be necessary for a long time.

Unfortunately, a great many people had made such promises, lured into doing so by a belief that comes with every speculative bubble. That is, the belief that, this time, things are different. The system is stable and self-correcting and so the bubble will not pop, as happened with the flawed economic systems of the past.

And, yet again, this faith was to prove unfounded. In 2008 the bubble did burst.

CHAPTER TEN

So far we have been discussing historical events and philosophical or political beliefs that, in one way or another, led to the financial crash of 2008. These included the mythstake of barter, which tells a false story of money's origins, one far simpler and sanitised compared to the messy, complex, and often brutal reality.

Related to the myth of barter we also have Arthur Tansley's idea of the 'ecosystem', said to be run according to the "universal law of equilibrium". Cybernetics took that concept, added "feedback loops", and then the Californian Ideology spread the belief that commercial markets should be self-correcting, just as ecosystems were imagined to be.

The belief that markets can be self-correcting have led to societies attempting to reduce state regulation, but, as Book 3 explained, the Iron Law shows, again and again, that this always leads to more government interference, not less, as has the fact that "deregulation" means "changing the regulatory structure in a way that suits us", which can actually mean a dramatic increase in the amount of rules, laws and regulations, even though common sense definitions of "deregulation" obviously sees it as a way of reducing red tape. Other features of our (anti)economy that defy common sense include the inverse correlation between the social utility of a job and how well it pays, the rise of bullshit jobs, and the fact that, while banking, financial and corporate elites say they believe in the "free market", they run their businesses more like they are feudal lords enriching themselves through a process that's far more political and extractive than commercial and productive. This last feature of our (anti)economy relates to what Graeber has called "Total Bureacratism/ Total Marketisation", or the way that, thanks to the revolving door between corporate capitalism and governmental positions, it makes no sense to distinguish between the business and the State.

Given that last point, we might expect to find that same entanglement of State and private concerns as we get into the main causes of the 2008 crash. As we will see, to a certain extent this is true. We shall soon learn about systems of lending that are neither state-owned nor private, but a hybrid of the two. However, if we dig right down to the bare essentials of the 2008 crash (what Mark Blyth called "the...elements that I believe you cannot remove counter factually and still explain the crisis") we will discover that all these essentials lie firmly in the private sector. So let's start digging.

The first thing that needs to be understood is that the 2008 crash had a 'Generator', something that triggered a wave of panic and loss of confidence in financial markets, but that, at first, this loss of confidence was confined to a more informal part of this sector. This first wave of panic could not have threatened to bring down the entire (anti)economy without an 'Amplifier' which meant that what began as a run on this informal sector spread and spread until the whole system was threatened with collapse. As we shall see, there was such an 'Amplifier'.

The 'Generator'

But lets let's start at the beginning with that "Generator". The bank run began in that informal part of financial operations known as the "shadow banking system". This is a term

that covers any financial intermediary that carries out much the same operations as banks- borrowing, lending, and asset-trading- but does so largely outside of the strict regulations that banks must adhere to. Included among “shadow banking” operations are pawnbrokers, payday lenders, investment banks and mobile payment systems. If they all have something in common (other than all falling under the term “shadow banking”) it is that they are all in the business of funnelling finance to finance. In other words, they are not in the business of increasing wealth through improvements to productivity; rather, they “make money” by moving money around financial markets.

One part of the shadow banking system that played an essential part in the 2008 crash was something known as the “repo market”. As everybody knows, businesses have to pay out wages and salaries, but how do they get the money to do that? Well, one way would be to get banks to send over enough cash to cover such costs.

However, that would be a very inconvenient way to go about paying one’s workers, particularly in the case of big businesses whose employee bill can run into thousands of millions. We would be talking about long convoys of armoured vehicles trucking in vast quantities of cash. Unsurprisingly, business found a far more convenient means of getting the money to pay wages and salaries, one which doesn’t involve the banks at all.

Instead of getting the money from their local bank, companies instead prefer to borrow and lend money to each other over very short periods at very low interest rates. This system of borrowing typically entails swapping assets for cash and then, the following day, those assets are repurchased for a fee. So, since this part of the shadow-banking system “makes money” through a system of sales and repurchases, its known as the “Repo Market”.

The ‘Repo Market’ emerged in the 1980s and was one result of a process known as “Disintermediation”. That term refers to a disruption to the traditional role that banks had played. According to this traditional and familiar view, banks are the ultimate middle-men. They act as intermediaries, sitting in the middle of somebody else’s business, and there they are positioned to connect borrowers and lenders and so help capital flow. In return for rendering this service, they get to charge a fee, which comes in the form of interest payments.

By the time we got to the 20th century, banks had fine-tuned their middle-man status, to the point where it was a safe, steady position to be in. More maverick speculators also derided it as dull, coining the term “3-6-3” banking. What banks did, according to this term, was borrow at 3 percent, lend at 6 percent, and by 3pm it was time to close up and enjoy a round of golf. Today there are sometimes complaints about automated banking services that delay the moment when one gets to talk to a real human being, but there was actually a time when banks were only open at times that made it almost impossible for anyone working 9-5 to use their services.

That safe, steady and dull position that banks were in was disrupted by the deregulations that swept through financial markets in the 1980s. Among other things, this change to the regulatory structure of finance meant that large corporations could bypass banks and lend those resources to one another directly. That is to say, they disintermediated.

As you can imagine, the effect that this disintermediation had was to put the squeeze on banks' profits. 3-6-3 banking was further squeezed by securitisation. Under the old 3-6-3 model, it was presumed that when a bank issued a loan to somebody, that loan stayed on its books until such time as both interest and principle were paid off.

But then a bright idea was formed, one which saw there was something else you could do, other than hold onto the liability of a loan and collect interest on it. Instead, you could separate out those loan payments and sell them onto somebody else. Certainly in the case of major banks, they had thousands and thousands of loans on their books. This new idea of securitisation recognised that you could take these many loans and bundle them together into packages that could be sold to anyone willing to accept the risk that came with them. In the case of mortgages, the process of bundling this type of loan together created a pool of mortgage payments. That was then sold to investors as a kind of income-generating contract known as "mortgage-backed securities".

Securitisation was a threat to the old ways of banking, but it also represented an opportunity. Above all, it appeared to be a way of reducing risk. After all, having packaged up and sold those loans on, they were no longer on the banks' books. So, since the risk associated with those loans had been offset by selling them on, the banks were in a position to borrow cheaper and make more loans. That, in turn, meant more people qualified for loans, since they were able to take advantage of the fact that securitisation enabled banks to dish out more loans at cheaper rates.

It seemed like a win-win situation. Banks were offsetting risk by bundling loans like mortgages into securities that were sold to the players in shadow-banking, and huge fees could be earned by those adept at this game of moving existing money around. Also, more and more people were able to get loans, including mortgages that gave them a shot at home ownership.

Searching For Collateral

But there was also a problem which went largely unrecognised. Basically, risk offsetting was mistaken for risk reduction. The risks inherent to those loans had not really disappeared, though. Instead, they just got pushed elsewhere. More specifically, the process of selling on loans led to mortgage-backed securities concentrating their risk in short-term repo markets.

Why did they end up there, of all places? Well, that all had to do with one of the regulations that traditional banking has to follow. It is a peculiar practice of banking that the terminology used hardly ever matches common sense definitions. Take the word 'Deposit' for example. Common sense tells us that making a deposit means you are entrusting that bank to hold onto your money and keep it safe until such time as you wish it returned to you.

But what you are really doing, when you "deposit money", is loaning the bank that money. Once "deposited", that money is no longer legally yours. It belongs to the bank, and they may do whatever they want with it (so long as it's within regulations or they avoid getting caught if not). Your bank statement does not really tell you how much money you have in the bank; rather, it tells you what the bank owes you.

Now, lending money entails risk. Thankfully, when you or I “deposit” money, that loan is covered by a guarantee (in the USA its known as “Federal Deposit Insurance”) that means even if the bank should fail, you’ll still get your money back.

Things are different in shadow banking. This informal system escapes the onerous regulations that traditional banking must comply with. Among other things, this means that there is no deposit insurance in repo markets like there is in traditional banking.

How, then, do repo-market players protect their investments? This is done by receiving collateral equivalent to the money lent. So long as that collateral does not lose its value, the lender will still get her money back, even if the borrower goes bust.

The critical point, though, is that this guarantee works only if the collateral does not lose value. So, really, only high-quality collateral will do. The most obvious form of high-quality collateral to use was Treasury Bills, as that is backed by the full faith and power of the US government. Treasury bills were indeed used as collateral, but as the shadow banking sector grew and grew, that form of high-quality collateral was increasingly in short supply. Something else was needed instead.

That “something else” was AAA-rated mortgage debt securities, which explains how come mortgages ended up in the repo market. They seemed like the sort of high-quality collateral that could cover losses as well as Treasury Bills. After all, they came with a triple-A rating.

But then, in 2006, there was a decline in house prices. That decline hit the value of those mortgage-backed securities, and since they no longer counted as high-quality collateral, those holding them to offset risk were left with three options, none of which were all that viable given the situation that was unfolding.

One option was to find more collateral. But people were less willing to hold that collateral, so that was not easy to do. Another option was to seek higher-quality collateral. But if there were such alternative assets they were in very short supply. That left one more option, which was to take a discount on what you would get back. All of these options negatively affected the bottom line of shadow banking business.

This led to a situation in which players in this market found that the value of what they held and what they could offer had fallen, and as a result they had trouble posting collateral. Really big players, such as Bear Sterns and Lehman Brothers, were included among those who had such trouble, and it forced them to make an announcement that the big boys in banking never want to make.

What announcement? Well, as the value in mortgage securities fell, the company was forced to publicly say that it was not facing any problems. Over a century ago, one Walter Baghot (1826-1877) wrote a book called ‘Longbaird Street’, in which he pointed out that if a major financial firm has to publicly announce “don’t worry folks, we have no problems”, then investors should assume that there are problems and that the bank is no longer “money good”. At least, once such a public announcement is made, investors can no longer assume everything is fine, and so lending to that bank dries up as investors lose confidence.

The fall in house prices and increases in mortgage defaults resulted in Bear Sterns investments falling in value, and that meant its “collateral calls” (what lenders will accept to continue lending) rose. This all had a negative effect on Bear Sterns’ reputation, and as that fell so did the company’s capacity to borrow. This was a disastrous situation to be in, given how much debt the major players held, relative to their assets.

Searching For Leverage

Banks have traditionally borrowed at short term. When you “deposit money”, remember, you are really lending the bank that money. You can redeem that loan on relatively short notice (this is what you do when you “withdraw” money from the bank). Now, when it comes to the loans they make, rather than the money they borrow from depositors, those loans almost always have a far longer maturity and it is harder to withdraw that money on short notice, as it is locked up in assets that are not so “liquid”.

Another thing that banks do is violate the sage advice of the Germans. They have a saying: “When you have two marks, spend one”. But fractional reserve banking is based on the principle that it’s possible to lend many more ‘marks’ (or whatever the currency is) than is actually held in the bank. The greater the ratio of assets (loans and investments out in the real world) relative to equities (the capital held in reserve as a cushion should hard times come along) is known as ‘Leverage’. The more levered up a financial firm is, the more debt it holds on its books, and the less of a ‘cushion’ it has.

During the run-up to the crisis, it was by no means uncommon for a major player like Bear Sterns to be running at thirty times leverage. With leverage that high, it only took a very small change in its asset values against its equity cushion to make the firm illiquid or even downright insolvent.

As securitised mortgages lost their value in 2006, that small decline became a reality. Those big banks that had been funding themselves through the shadow banking sector’s repo markets (this involved borrowing overnight and loaning that money out for much longer periods, practices that put huge amounts of leverage on their balance sheet) now found that their funding sources had disappeared. The repo markets were supposed to provide liquidity, but now, with things the way they were, it was hard if not impossible to find anyone who was willing to lend at normal rates, and so liquidity dried up. True, it’s not the case that all the banks’ funding dried up, but then it didn’t need to in order to cause serious harm, not when you consider how levered up those banks were.

Let’s return to that idea of fractional reserve banking that says you can loan out much more money than you actually have. This works so long as the bank’s customers behave normally, which means they only ever make partial withdrawals. If you think about your own behaviour and that of the people you know, you’ll see that this is indeed how we normally access the money entrusted to banks.

But, as ever, this rule comes with an exception. Sometimes a bank gets into trouble over its debts. There are two ways in which such trouble can come about. One is that the country’s creditors collectively refuse to roll over the bank’s short-term debts. The other is when

depositors effectively refuse to roll over debt, which is what happens when they all try to withdraw all their money.

Sometimes, depositors do all try to withdraw their money at once. This is what happens when those depositors lose confidence in the creditworthiness of the bank (say, because it just publicly announced the bank is not in trouble). Then, a bank run ensues, as panicky depositors rush to withdraw their money.

Faced with its depositors trying to withdraw their money en mass, the bank now finds itself in a situation where it is liquidating assets under duress. Particularly in the case where the loans held by the bank are highly illiquid and idiosyncratic (a good example being money borrowed by local businesses about which the bank has better information compared to other investors) the prices received as it sells under duress will be fire-sale prices.

Contagion and Fire Sales

And now another problem tends to arise, one known as 'Contagion'. It's often the case that different banks hold broadly similar portfolios of assets. In normal times those assets may be relatively liquid, but unfortunately they can become highly illiquid, right at the time when the bank most needs them.

What happened in the shadow banking system is a good example of this unfortunate situation. All the players now found themselves with devaluing mortgage securities, and since they were all trying to cash out what were essentially similar assets, they were all attempting to use the same devaluing collateral in order to raise money. This inevitably led to a situation where some found they could not sell those mortgage-backed securities. But they still desperately needed to find the money somewhere, so they tried to sell anything else they could. That's what's meant by 'Contagion'. Having to liquidate at fire-sale prices can, given the conditions of a systemic banking crisis, lead to a far broader range of assets also being burned up in that "fire sale". In the case of the panic running through shadow banking, that included assets that had nothing to do with mortgages.

Sometimes a more appropriate term than "asset selling" is "asset dumping". When that occurs, when many investors are just trying to offload devaluing assets, the market may well find that it simply can't absorb the volume of assets being sold all at once. Once the market finds itself in a situation where that level of asset dumping is taking place, the fire-sale, which began as people rushed to avoid being the suckers who lost money during a time of uncertainty for the banks, turns the bank run and collapse into something like a self-fulfilling prophecy.

The more assets are dumped or sold at fire-sale prices, the more prices plummet, the more firms become too bogged down with illiquid assets and fold, which causes trust to diminish even further, which amplifies the panic to sell off assets at fire-sale prices. The weird thing is that, given how modern banking operates, it's always the case that there is not enough money to cover everybody's total deposits. But, normally, we don't let that reality drive us into a panic. No, we just assume that the money will be "there" as and when we need it.

Money and Faith

The roots of economics lie in theology, and I would argue that we still have theological attitudes when it comes to banking, since the whole thing is built on a combination of mathematics and faith. We believe the money is there, and thus feel we have the right to invest, to build, and to consume. But, sometimes, our faith evaporates and, even though nothing material has really changed (the earth has the same resources as yesterday, and our capacity to work is unchanged) we believe that, since there is now “not enough money”, we cannot afford to invest, to build, to consume. Commodities remain on the shelves, now beyond the affordability even of people pushing wheelbarrows of money before them, and a belief forms in the mass consciousness of the populace that “the economy has collapsed”. Just such a situation happened in 2006, as faith in the shadow-banking sector evaporated.

Where To Place the Blame

At this point we should acknowledge that, so far, none of this can be blamed on the State. That some people do now blame the State for the debt stemming from this crisis shows confusion when it comes to cause and effect. I suppose you could accuse the State or other public regulatory bodies of not having the right regulations in place, but remember that private interests make plenty of donations to political campaigns in order to get those regulations passed (remember what “deregulation” really means). If politicians cave into the pressure lobbying puts them under, that’s hardly surprising given how relentless corporate Capitalism is at driving us towards Total Bureacratism/ Total Marketisation.

No, this crisis cannot be blamed on the State. Nor can the fault be said to lie entirely with a few “bad apples” (i.e, the moral failings of individual bankers). The multi-billion dollar panic that arose over defaulting mortgage-backed securities was a quintessentially private-sector crisis.

Having said all that, the story of the Great Recession is not yet fully told. The facts we have looked into so far are not sufficient if we are to explain how what began as a panic in shadow-banking turned into a global crisis. In order to understand how that happened, we need to talk about the ‘Amplifier’. That means we need to talk about the way the structure of those mortgage-backed securities combined with unbacked insurance policies called credit default swaps, and how all that led to something very bad indeed. That something was, according to Mark Blyth, “a correlation bomb that spread the repo market crisis into the global system”.

CHAPTER ELEVEN

The housing market is similar in some ways to the jobs market. How so? Well, for one thing, we find, across the political spectrum, an agreement that house building is a good thing, just as it is generally agreed that “more jobs” is a good thing. For the Left, reducing homelessness is seen as a way to reduce marginalisation and discrimination. The Right are in favour of home ownership because they see it as a way to build an ownership society and ensure employees have more of a stake in capitalism than would be the case for nomadic vagrants.

Conflicting Interests

Also, just as is the case with jobs, there is a tension over how much property development there should be. This tension comes from two things. One is the two contradictory imperatives of Capitalism, which is to aim for infinite growth while ensuring scarcity never goes away. The other is the conflicting interests of buyers and sellers.

In the case of the jobs market, if you are a prospective employee trying to sell your wage-labour, you want the value of that wage labour to be high. It's most likely to fetch a good price when there are plenty of jobs available and not enough people to fill them. That's why those selling labour are not in favour of jobs disappearing overseas where labour laws are more lax, or high levels of immigration, as they both degrade the value of labour.

Conversely, for those buying labour, since they want it to be as cheap as possible, they do favour moving business to places where exploitation can be pushed further than other places with their frustrating laws protecting employees. They also favour a market with more unemployed people than jobs, and thus favour uncontrolled immigration. This is doubly the case if they happen to own property as well (which they always do) as demand from so many people entering the country and needing somewhere to live drives up the value of that property.

But, isn't the official position always one that sees “more jobs” as preferable? Yes but, paradoxically, that does not mean to say we all favour full employment. Among those who believe ‘Full Employment’ should not mean one hundred percent of those who want a job have got one is the Federal Reserve. The reason why this organisation does not adhere to the common sense definition of ‘full employment’ is because, while the Fed is legally obliged to aim for full employment, it is also under a legal obligation to try and keep prices stable, and this latter obligation takes priority.

Therefore, the Fed actually defines ‘full employment’ as whatever level of unemployment it believes is necessary to hit its inflation target. As Stephanie Kelton (b. 1969) explained, “if it takes eight or ten million unemployed people to stabilise prices, then that is how the Fed defines full employment. It's counterintuitive to define full employment as a certain level of unemployment. But politically speaking, it is useful for the Fed as it means they can claim success by defining away the very problem they were tasked to solve”.

Along with ensuring some percentage of people are not employed so as to try and ensure price stability, some agree with Karl Marx that there should be a “reserve army of the

unemployed” because, without that “reserve army”, there would be too much upward pressure on wages and some of us don’t like that.

The property market finds itself under similar conflicting interests to those mentioned above. If you are looking for somewhere to live, it’s in your interests for housing to be in plentiful supply, since if that is the case you’re more likely to find affordable accommodation. But, if you are a property owner (and even more so if you own several properties, most of which are not somewhere for you to live, but a vehicle of investment) you are most likely not in favour of house building (at least not affordable house building), since a scarcity of affordable housing boosts the value of your property, puts more pressure on your employees who risk homelessness if they cannot keep up rent or mortgage repayments, and concreting over the countryside devalues your property and spoils your lovely view.

So, there is a tension, a conflict of interests, when it comes to housing. While there is agreement across the political spectrum that more people should get on the housing ladder, there is also, paradoxically, an attitude amongst some that property should be scarce enough to ensure the value of their property goes up. We all want more housing but we don’t all want to end homelessness.

Housing a Boom in Babies

Regardless of whether the value of property is relatively low or high, it’s nearly always the case that a home will be the most expensive purchase you ever make. Indeed, for most of us, it costs more than we can afford outright and so, if we are to get on the property ladder, we need financial assistance and maybe help from the government, too.

When World War II ended, all those civilians who did military service were able to return to their loved ones, and so eager were they to raise families in this new era of peace that soon there was talk of a “baby boomer generation”. With so many returning soldiers wanting to start families, a huge demand for homes was created.

The challenge to build those homes was partially solved by the military itself. It had needed to provide housing for its servicemen and had developed high speed construction techniques in order for supply to meet that demand. After the war, a building firm called Levitt and Sons used those same construction techniques to build suburban rental homes.

However, more rapid construction techniques only partly solved the problem. In order to build enough homes, companies like Levitt and Sons needed access to enough capital to purchase the land and building materials necessary to get the job done, but they had insufficient capital and so house building was not as rapid as it needed to be.

At this point, the government stepped in and offered assistance. Through the Federal Housing Authority or FHA, the builders were provided with the money needed to expand production. The FHA also insured 30-year mortgages up to 90 percent. Thanks to the FHA, now all it took to become a home owner was a small down payment. Yes, you had to repay that mortgage, but monthly repayments were \$58, which was pretty much what you had to pay in rent.

Since the residents of what became known as 'Levittown' paid back their mortgages, and the builders who provided these homes paid back their production advances, the State was not being charitable in its assistance. A more appropriate way to think of the government's role would be to compare it to the bank in the game 'Monopoly'. If nobody had any money when the game started it would be impossible to play, and so the money is just "there" to be handed out so play can commence. In the case of the FHA, they used taxpayers' money to make "commitments" to companies building those homes and, by insuring them, the state helped the banking system serve the overall economy with aligned interests. Thanks to this combination of rapid building techniques developed by the military, financial support from the banks and further assistance from the State, construction and purchasing of homes could carry on without delay.

Now, the key phrase in all that is "aligned interests", as that is essential to mortgages working to serve rather than defraud us. A bank is basically making a bet when it approves a loan such as a mortgage, which is that whoever is loaned that money will have sufficient creditworthiness to repay it, plus interest. With the right government support, the level of creditworthiness can be lowered so that more of us get a chance to get a foot on the property ladder, but banks still find it's in their self-interest to ensure loans, property and businesses are priced correctly. As for the person who took out that mortgage so as to purchase the house now rather than wait (maybe) years before they have the funds to buy it outright, since that home is put up as collateral and therefore they could lose it if they fall behind on repayments, it's in their self-interest to show they are worthy of the credit that the state/banks thought they had when approving the mortgage. According to Dylan Ratigan, "the banking system helped align the self-interests of all sides to ensure the productive movement of capital through the economy; this was a key to American prosperity".

Fannie Mae

State support in home ownership did not begin post-War. Rather, it was during the Great Depression of the 1930s that the first government projects to increase home ownership began. Back then, savings and loans associations couldn't develop a national market for mortgages as a way to spread risk, because they were not allowed to expand across state boundaries. So the President (who, at that time, was Franklin D. Roosevelt (1882-1945)) founded 'Fannie Mae' or the 'Federal National Mortgage Association', in 1938. Thirty-two years later, congress established the 'Federal Home Loan Mortgage Association', which is usually known as Freddie Mac.

Both Fannie and Freddie operate in the conventional secondary mortgage market. They are not there to lend money to home buyers, that's still the role that banks play. Instead, once a bank has loaned money, players in the conventional secondary mortgage market, like Fannie Mae, buy that loan. Since the bank has now sold that loan, its liability is no longer on its books and, since the bank has got its money back already, it can lend even more to other homebuyers seeking a mortgage.

Also, Fannie and Freddie would bundle mortgages and other loans into packages that would be sold to other investors, and in so doing more resources were freed up, meaning Fannie and Freddie could buy even more mortgages.

But Fannie and Freddie did not only come with the money to buy other people's debts, they also provided a guarantee to the investors: they would repay not only the interest but the principle too, should the borrowers be unable to repay. That was certainly a generous insurance, but, again, it wasn't exactly charity. Actually, Fannie Mae and Freddie Mac profited greatly from the fees they charged for providing that guarantee.

A Private-Public Partnership

Now, when it comes to the part that Fannie and Freddie played in allowing the mortgage market to grow a speculative bubble, it's interesting to note that they appear to be different kinds of enterprises, depending on one's political bias. To the Right, Fannie and Freddie appear to be government corporations, and thus more proof that State interference in the workings of the market leads to no good. But to the Left, Fannie and Freddie are private businesses, and thus one more example of how such interests don't necessarily align with the best interests of society as a whole.

The reason why Fannie and Freddie seem like government corporations to some, and private businesses to others, is because, actually, they are both at the same time. They are prime examples of how, in this era of Total Bureacratism/ Total Marketisation, and the revolving door between Politics and Business, it's pointless trying to distinguish between the two. In the case of Fannie and Freddie, they are a hybrid of public and private, the technical term for which is a 'Government-Sponsored Enterprise' or GSE. Basically, that means they are privately owned, but come with an implicit Federal guarantee in case they should fail. That means Fannie and Freddie are the kind of enterprise that allow private owners to take on risks, pocket the profits if the gamble turns out well, but count on taxpayers to cover any losses.

Not surprisingly, then, some see GSEs as, potentially, a particularly dangerous sort of enterprise. But without them, plus a vast network of supporting financial institutions subject to federal deposit insurance and, finally, the fact that mortgage interest is tax deductible, the housing sector couldn't have existed on the scale it reached by the 90s.

Building the CMO Structure

By 1983, that network saw the introduction of the 'Collateralised Mortgage Obligation'. It had been invented by an investment banking team led by Larry Fink (b. 1952) at First Boston. This was the first of those mortgage-backed securities. The idea behind the CMO was that you could take many loans (by 'many' I mean several thousands) and bundle them all together into a single package to be sold on to investors. Right away, risk looks like it's been reduced, because so many households are included and while some may not pay back their loans, that risk is hedged by the others that will. As for the scenario in which so many default on their mortgages that the whole security is threatened, well that could be ruled out because, after all, who doesn't keep up on mortgage repayment if it's at all possible to do so?

Still, there was some risks involved in such securities, so Fink and his team came up with one more innovation to manage that risk. These CMOs were sliced into several distinct

classes or 'Tranches', and then those tranches were given different ratings and yields, depending on how risky/secure they were.

At the 'bottom', and therefore carrying the most risk, you had securities with a Caa and Ca rating. In other words, pure junk. Of course, investors would expect something in return for holding such risky investments, and those returns came in the form of a far larger share of payments when the going is good.

Securities with a Ba or B rating were still in the "more risky than secure" range, but those with a Baa rating had an average risky/safe ratio. After that, you come to the 'top' securities that are deemed to have low risk. They get an A or, even better, an AAA rating. They were so safe, not only because those borrowers who took out such loans were so creditworthy (things like Treasury Bills got the AAA rating) but also thanks to the design of Fink's CMOs.

The easiest way to see how this works is to compare all the interest payments coming in to water from an irrigation canal. The further your crops are from the source of that water, the more risk you have of getting insufficient water, should the canal start to run dry. In the case of those mortgage-backed securities, even if a lot of households defaulted, the interest payments coming in would still be passed onto those holding AAA-rated securities (so, in our canal analogy, it's like having crops really close to the source feeding the canal). Holding AAA securities meant you would lose nothing until all the other investors lost their money (i.e, the canal runs completely dry). But, since the risk was so low, holders of AAA securities got a much lower return when the going was good.

The demand for these CMOs was high, and by the mid 1990s mortgage-backed securities had changed the whole structure of housing finance. People began to work as 'mortgage brokers'. Their job was to source deals for a new group of 'Mortgage Banks'. Having bought those loans from the brokers, the mortgage banks only had to wait long enough to have enough loans for Wall Street to securitise.

The 'Community Re-Investment Act

It was also during the mid-1990s that Fannie and Freddie changed focus. Whereas before they had focused on reducing the housing costs of the middle classes, during the Clinton Administration Fannie and Freddie shifted to low-income earners. So, in 1994, Fannie promised a "trillion dollar commitment toward providing 10 million low-income citizens with housing". The following year saw a tightening of the 'Community Re-investment act'. First introduced in 1974, the CRA was first enacted to reduce minority discrimination in the housing market. The CRA meant any institution covered by Federal Insurance (such as banks) had to provide mortgage loans throughout its entire region of operation, including poor areas. By 1995, any bank wishing to avoid a low CRA rating had to show they were issuing a certain number of loans to households earning less than 80 percent of the medium income. Banks were keen not to let their CRA rating fall too low because of another change that also occurred in 1995. In that year, banks became free to merge with banks in any other state. But since scoring a low CRA rating could prevent such mergers, and by now we were well into the era of mergers and acquisitions, banks had lots of incentives to obtain decent CRA ratings. It was imperative, then, to show willingness to meet the needs of low-income earners, and the way to do that was to buy the loans granted to them.

Something else the amendment allowed for was the securitisation of CRA mortgages. This began in 1997, with Bear Sterns being the first to do so. As ever, the idea was that you gather lots of CRA mortgages together, and then sell those 'packages' to investors as securities based on the risk each investor wanted to take on. Freddie Mac guaranteed these mortgages, which were given a AAA rating. That, remember, meant they were ultra-safe and secure. But, actually, these securities included risky loans.

The Influence of the Web

Now, while all this was going on, the Internet was spreading its web of connected information technologies and disruption existing businesses in the process. In the case of banks, that disruption came in the shape of better informed customers, because now people could easily go online and there find ways of comparing rates on loans or credit cards, and speed through applications like never before.

Banks were not the only entities to face disruption in this new, interconnected era. Millions of people also faced uncertain futures, given all the disruptive technologies developing around them, and mergers and acquisitions making their current positions precarious indeed. In most cases, people had insufficient political influence to do much about the changes going on.

With banks, though, it was different. They did wield enough political influence to avoid such changes, if they chose to. They need not have exercised that choice. The banks could have chosen instead to adapt to the changes wrought by the Internet, in ways that might have increased price integrity and led to more simplicity and visibility in financial markets.

But by now readers will know that this was not the option that banks went with. Instead, they took advantage of the fact that some of the technologies now available could, when coupled with their influence over governments, bring about the sort of 'deregulation' banks prefer, which is to say, an increase in the amount of rules and a reduction in the visibility, price integrity and choice. So long as such changes led to the banks making more profit, they were deemed changes worth pursuing.

CDOs

During this time, financial innovators came up a new kind of digital bond, which was something known as a Consolidated Debt Obligation or CDO. Thanks to the CDO, there was now a way for banks to sell bets to investors looking to gamble on whether people could meet all their obligations to pay. CDOs were, like mortgage bonds, a way of getting around the problem of trapped capital. Rather than wait years and years for a customer to repay a mortgage, mortgage bonds turned a loan into a loan of a loan, because whereas the bank issued loans to home buyers in return for a greater payment over time, now investment banks buying mortgage bonds could provide all that money in one sum, in return for those same payments expected over time.

And now that CDOs had come along, all the capital that was trapped in obligations to repay could be sold immediately. It was no longer the case that transactions needed to be held up

for want of funds. Now, thanks to mortgage bonds and CDOs, the risks could be transferred to investors who stumped up the money today. According to Dylan Ratigan, “the hope was that the economy would now run like a perfectly oiled machine, that with such amazing computer-age oil, there would be no friction at all”.

And then mortgage bonds were joined by another bond known as an Asset-Backed Security. Whereas the former type of bond meant you owned the right to collect money for the repayment of home loans, the Asset-Backed Security allowed investors to buy the rights to collect on any debt payment you can think of, be it car loans, credit cards or whatever. As more and more of these bonds found their way onto the market, an idea developed, which was that financial markets could use the incredible data storage and processing power of computer networks and create CDO monster bonds.

A rough analogy for these monster bonds would be to imagine a food blender. Only, what goes into that blender is not fruit or veg, but any commitment to repay money on a regular schedule. So, in go mortgages, credit card payments, car loans, gym memberships, college loans, until the blender contains trillions of dollars worth of loans. Then, once this statistical blender has mixed them all up and created a smoothie of debt, you can sell portions of that smoothie as investments.

But who was buying these ‘smoothies’? Well, what the investment banks wanted to do was to sell CDO monster bonds to the wealthiest buyers on financial markets. That included the state pension managers whose job it was to look after people’s investments and retirement money. Since these managers could not touch any investment that rated less than AAA, it was essential that these monster bonds qualified for the highest rating possible. Getting a AAA rating depended on the overall rating of each debtor whose loan was included in that ‘smoothie’. Since the monster bonds were indeed getting AAA ratings, that had to mean, at the very least, that there were enough reliable debtors who could be guaranteed to repay their loans, to hedge against the riskier lenders whose debt might also be blended into the mix.

Unfortunately, as time passed and we approached the mid-noughties, this was no longer really the case. Those ratings agencies were no longer carefully ascertaining the creditworthiness of these investments; instead they were rubber-stamping everything with a AAA rating. Everything- including outright junk.

CHAPTER TWELVE

When banks run commercials advertising their business, those adverts tend to play on the traditional role that banks have played in society. The message that such commercials always want to get across is that we, the public, can have faith in the bank's reputation. Slogans like "By Your Side" and "We're There For You", remind us of banks' traditional role as dependable middle-man, there to take care of our money and to help put capital to good use.

Corrupting Factors

But such adverts could not be said to accurately portray the relationship between banks and their customers in the runup to the 2008 crash. Instead, it would be closer to the truth to say that this cozy view of the banks as paternalistic middle-men had been corrupted by several major developments.

The securitisation food-chain, which we discussed in the last chapter, was one such development. One thing it resulted in was mortgage lenders who no longer cared if those mortgages would ever be repaid. Why should they care? As soon as a mortgage was arranged, it was sold on to investment banks and so the liability of that loan was their problem.

As for those investment banks, they in turn sold the mortgage-backed securities to various Structured Investment Vehicles or SIVs (more on these later) so, again, an attitude of "it's off our hands now, and therefore not our problem" took hold.

As well as treating debt like a hot potato, passing it down the securitisation food-chain as soon as possible, lenders also began paying what were, in effect, bribes to mortgage brokers so that they would push borrowers into taking out the most expensive loans possible. That way, the lenders could be sure to generate loans with higher sales prices. As ever, banking terminology chose not to call a spade a spade, and so these were not actually called 'bribes'. Rather, they were known as "yield spread premiums".

Whatever term was applied to such practices, the fact was that, increasingly, investment banks were selling trash to their customers. This of course raises the question of why they didn't care that this was what they were doing.

There were three main reasons for this lack of care. The first is that we should not think of these banks as operating according to the former model of relationship banking, regardless of how much high street banks promote themselves as caring and dependable.

The second reason was that since the banks and bankers would not share in any subsequent losses in the event of their customers being suckers lured into raw deals, the fee structures themselves came with zero penalties for selling junk. And thirdly, we have bankers' compensation. What dominated that compensation, by a very large margin, were annual bonuses driven by that year's transaction revenues. Since that was the case, traders and salesmen had little incentive to care about what happened later.

Meanwhile, the ratings process- the means by which those securities received a rating of AAA downwards, was itself corrupted by three factors, namely personal turnover, a change from the policy of paying buyers to rate those securities to paying sellers to do so, and, finally, the rise in something known as “ratings consulting”.

Imagine if the securities backed by B-rated mortgages had never risen past a B-rating themselves. Had that been the case, we can rest assured that the market for such securities would not have become as big as it did. One major reason it grew into such a big market was because the agencies in charge of those ratings were too generous with the AAA stamp. Pretty much all investors swore by these ratings, so as the securities backed by B-rated mortgages were stamped with a shiny AAA, it felt like junk mortgages had been transformed into high-quality securities- the financial equivalent of turning base metals into gold.

But base metals were not really being transformed into gold. As various incidents showed, there were huge concerns regarding the reliability and independent nature of those ratings agencies.

One such incident involved one of those agencies (Moody's) and the Dutch bank ABN AMRO. The bank had developed a “Constant-Proportion Debt Obligation” or CPDO. Imagine if you could take the credit risks of hundreds of companies and then bet on the overall risk. That's pretty much what a CPDO was. But, there was more to them than that, because the CPDO came with a special twist. In the event of the CPDO losing money, it spends even more trying to win it back.

Anyway, how the CPDO worked is less interesting than how it was rated. Investigations into this matter revealed an uncomfortable truth, which is that, sometimes, the agency first decides what the rating should be, and then its computers are programmed to obtain that rating.

What that means is that the ratings agencies are not really, truly independent. Rather, there is a sense in which those agencies and their customers collaborate in building products like CPDOs. And, in the event of one agency not delivering the sort of service the customer wanted, well, that customer could always go to one of the other agencies and get a second opinion.

In the case of the CPDO, both Moody's and their main competitor, Standard and Poor, gave it the highest possible grade. But as for the third major competitor, Fitch, when they ran it through their models, the results showed that, actually, the CPDO was little better than junk. Although their assessment was the accurate one, not a single bank came to Fitch to have its CPDO rated. No, they all went to those agencies that would rate it in such a way as to make it seem like base metals had been transformed into gold. So what if it was really fool's gold? There were more than enough fools who would buy it, mistaking it for the real thing.

How Ratings Agencies Became Collaborators

Perhaps it is not all that surprising that city spivs who give places like Wall Street such a controversial reputation should have behaved in this way. But the ratings agencies

themselves are another matter. Once upon a time, they had a reputation as the most conscientious, inscrutable and grumpy bean counters imaginable, and therefore the last people one would think would become eager participants in ratings inflation. So, how did that happen?

This brings us to another one of those previously mentioned factors. Up until the 1970s, ratings agencies were paid by the buyers of the securities they rated. This was a sensible way of doing things, as can be appreciated if you think about the incentives involved in buying/ selling a house. Here, too, the buyer of the property pays to have it valued, for one simple reason: It's hard to trust an appraiser paid by the seller of the house, since their motive may well not be to sell it at its true value, but rather to be paid as much as they can possibly get.

But, in the case of securities, certain changes meant a switch had to be made, one in which the ratings agencies were paid by the very investors creating and selling securities. Due to the growing complexity of those bonds and derivatives, and also their sheer volume, it became far too impractical for the agencies to value them all. Maybe they could have with a much, much larger organisation. But instead of going for that option, a decision was made to charge potential sellers instead.

By the year 2000, then, Fitch, Moody's and Standard and Poor, were all being paid to rate new securities almost entirely by the large investment banks that issued them. That's one reason why those ratings agencies became so cooperative that the result was ratings inflation. There were only a handful of those issuers, and the ratings agencies were loathe to turn away the few customers they could deal with, following certain regulatory changes imposed by the SEC.

That was not all. A further conflict of interest rose from the fact that the ratings agencies also rated the debt of the banks themselves. But, while in the run-up to the 2008 crash there was certainly cases where a bank's rating should have been downgraded, in actual fact this was something the agencies never did, since they knew such a move would infuriate a major customer. So instead of rating banks' debts and investment banks' bonds and securities honestly, those agencies instead got involved in that aforementioned 'consulting', whereby they received enormous fees for advising their handful of customers about how to go about constructing a security that would receive a high rating, and fiddling their models to ensure that was the case.

Those computer models had been designed with the following expectation in mind- that the banks involved had vetted most of the loans blended to create the new bonds, and that the likelihood of being paid back was average. But, as ratings inflation took off, the investment banks found that if they mixed low-risk loans (say, the credit cards of wealthy people) with high-risk loans (say, mortgages held by NINJAs, or folk with no income, job, or assets) the credit score produced by that mix of high- and low-risk loans came out the same as when securities and bonds were a mix of high- and medium-risk loans. And, as one player got away with including more junk in the bond and still receiving a AAA rating from those ultra-compliment agencies, that only incentivised competitors to raise the stakes too. After all, there was a huge amount of short-term gains to be had, as the email which read "let's hope we're all rich and retired before this house of cards collapses" made clear.

True, more cautious investors might have found it rather worrying that the safe loans in the blender offered zero protection to the seriously risky ones. But not these guys.

CHAPTER THIRTEEN

Signs Of Trouble

The way our discussion concerning the essential causes of the 2008 crash has gone so far may have given the impression that things seemed fine right up until that fateful year. But actually, it was in the early 90s that collateralised mortgage obligations first showed that they could produce a crisis. It is true that this crisis was very small in comparison to what was to come. Losses were estimated at \$55 billion, whereas the 2008 losses would go way beyond a trillion dollars. But, nevertheless, it was a warning of the sort of damage that could be done by a perversely incented financial system that was not properly regulated.

It was also during the 90s that we saw the introduction of something else that could have served as a warning that trouble was brewing. Back then, housing finance saw the entry of such things as 'Household Finance', and 'Beneficial Finance'. While they sound like friendly, homely services these were, in fact, hard money lenders who specialised in high-risk, high-yield lending. They were also particularly aggressive in going after defaulting borrowers. At this time, riskier house lending amounted to a small fraction of the market, but thanks to certain incentives it was growing and would be enormous by the next decade.

Those incentives were not exactly the sort of motives that conferred nothing but benefits on society. The reason why players became attracted to high-risk mortgages was because, since they carried high fees and interest rates, one could make huge profits from them. Such an outcome was even more likely if the risks involved could be disguised.

Furthermore, by the 90s it had been found that when house prices are rising, it was possible to pay off any loan by flipping houses. Another option made possible by this situation was to take out additional home equity loans, based on the property's supposed appreciation. Both options opened up the possibility of temporarily concealing fraud with a ponzi-like bubble.

Back then, in the 90s, the rise in high-risk lending was gradual in comparison to what was to come. But it could have served as a warning sign had enough of the people who mattered been inclined to look. This was the point at which securitisation's fatal flaw began to be exploited. When it comes to gambling, it is essential that there is a link between the decisions one takes and the consequences that result. There's a reason why a big roll of the dice is known as "going for broke". It's because the gambler risks losing everything if the stakes are high enough.

But the securitisation food-chain severed that essential link. This did nothing to prevent trouble from eventually following bad decisions, but what it did do was ensure such consequences would be someone else's problem. Had the financial sector done something like require those selling loans to accept a fraction of subsequent losses, the potential harm that could be caused by this severance of the link between credit decisions and subsequent credit risk and consequences could have been accounted for. But this was not a step anybody took. Instead, people began turning out bad loans just to sell them, knowing full well that when the losses came in, somebody else would be the sucker shouldering the debts generated by those bad deals.

As securitisation spread, riskier loans became included in those 'packages'. In the case of mortgages, that meant securitisation spread from high-quality mortgages to those that were classified as 'sub-prime'. As well as mortgages, the 90s saw many other kinds of loans being fed into the securitisation machine. In went student tuition loans, car loans, the portfolios of credit card receivables, and the bank loans that were being used to finance leveraged corporate buyouts. And, in each case, it was the same old story: at first, only high-quality loans were used, but over time there was a steady decline in quality.

As this decline in quality was going on, the securitisation was growing in complexity and opaqueness. These, unfortunately, were ideal conditions for bringing about a gradual and disguised rise in leverage and risk on a system-wide scale. This rise manifested itself in the way that many of the buyers of these risky securitised products were highly leveraged and unregulated "shadow banking" entities such as hedge funds. Those securitised mortgage products were "insured" via credit default swaps.

The 'Amplifier'

This brings us to the point where we should talk about the 'Amplifier' that spread the crisis from the shadow banking sector into the whole (anti)economy. That amplifier came in the guise of a particular kind of 'derivative'. But what is a derivative? Well, traditionally, banks had acted as middle-men, there to link together people who wished to buy and sell assets (in other words, property, or a claim on property or income). But then, an idea came about, one which saw there was a way to trade in things such as movements in interest rates, that were not assets in any normal sense. The way to do that was to arrange bets on how a particular asset would perform over a certain period, and write that up as a contract. That contract was a 'derivative'.

Now, there are four main types of derivative, but only one kind need concern us here. As financial markets got more into selling consolidated debt obligations, the risks involved in such activity did cause some concern. After all, if the borrowers who made up the original loans could not keep up their payments, that would have spelled big trouble for the banks packaging those loans into CDOs.

Or rather, it would spell trouble unless the banks found a way to protect themselves. To do that, they needed to take out insurance policies against defaulting on CDOs.

However, traditional insurance would not do, because it had capital requirements. That meant traditional insurance policies were subject to careful government regulation, the purpose of which was to ensure that insurers held onto enough money to pay claims against them. Since they didn't want to have to pay the expense of all the regulations that came with insurance, the investment banks decided not to call their protection 'insurance'. Instead, they referred to it as "credit default swaps".

Now, if we are to get to the bottom of how derivatives like credit default swaps amplified the crisis that began in the repo market, we need to know a little about how there is sometimes a correlation between assets. A particularly noteworthy example would be a "negative correlation". This comes about when, if asset A increases in value, then asset B reliably

drops in value. Thanks to such negative correlations, investors have ways in which they can hedge their bets.

But just how reliable are these correlations? Unfortunately, the answer is: Not completely reliable. While it is true to say, for example, that the Euro is negatively correlated to the Dollar (one tends to go down when the other goes up) and that this can be used to hedge bets, sometimes that correlation breaks down, and if you relied on them working as expected, that breakdown can leave you very exposed. Supposedly, credit default swaps were the way to overcome this problem of correlation, but ultimately they amplified it.

The Story Of Derivatives

The story of derivatives and how they became the amplifiers of the repo market crisis began in the mid-1990s. At this time, investors were really getting into gambling over the potential value of Web-based companies, and the stocks and shares that make up the world's equity markets were poised to inflate the dot-com bubble.

Since risky investments were involved, those investors needed uncorrelated assets that they could use as hedges in the event of their equities falling in value. It soon became obvious that real-estate was the asset to use.

Why real-estate? The reason why was because, not only was this an asset that was uncorrelated to equities, real-estate was also known to be “uncorrelated within their class”. That meant that, should houses fall in value in one part of the country, that should have no impact on house or apartment prices in other parts of the country. That made real-estate assets safe bets in their own right.

Even better, a way was found to increase the safety of these already safe investments, and all while enhancing returns. We've already covered how this was done. It was achieved by “tranching the security” and thereby turning relatively simple mortgage-based securities into CDOs. Thanks to this method, you could now combine the mortgage payments of many bits of real-estate (a bit of Manhattan property here, a smidge of Arizona suburb there, a bit of Baltimore waterfront) put them all in the same security, but then keep them separate thanks to those ‘tranches’, which allowed you to sell different parts of the security to different people, paying different interest rates depending on the risks they took on.

So, you began with real-estate markets, which were already known to be “uncorrelated within their class”. If those different real-estate markets were then cut up and re-combined, that (so the thinking went) made them super-uncorrelated. Yes, if the borrowers with the riskiest mortgages and loans defaulted, that would wipe out the equity tranche holders. But those holding safer investments need not worry, because the structure of the CDO meant they were isolated from that loss.

That meant these CDOs seemed to promise the best of both worlds, since they not only enhanced the safety of mortgage-backed securities, they also promised much greater returns for those willing to hold the greater risk. As house prices in the US nearly doubled from 1997 to 2008, so great was the demand for these securities, their sales exploded. This

fervour for CDOs showed that they had become more than simple equity hedges. They had become objects of investors' desire in their own right.

Credit Default Swaps

Now, securities like CDOs could be sold with an attached credit default swap. Both the purchaser and the issuer of the credit default swap got something out of this arrangement. In the former case, it meant you were insured against the default of the bond on which the credit default swap was written. As for the issuer, what they got was a regular stream of income from those who purchased credit default swaps, sort of like how those who sell insurance can expect to receive customers' insurance premiums.

However, where traditional insurance is concerned, it's typically the case that issuers use actuarial tables and other such means so as to calculate the risks of the cover they provide. They need to do this because, as sure as night follows day, some of their customers will cash in their policies, and so insurance companies need to keep sufficient money to hand in order to cover for that. It's also essential to build up cash reserves to be paid out when, inevitably, policy claims are made against the firm.

How much of a cushion should you set aside, though? That depended on the probability of default. As the housing bubble inflated, credit default swaps were being written on entities whose anticipated losses were essentially zero. The idea that such giants of the financial world as Bear Sterns and Lehman Brothers could default was considered well beyond the boundaries of extreme possibility. Since no losses were anticipated, those writing credit default swaps on such entities kept very little capital in reserve.

The decade from 1997 to 2008 was one in which house price increases told everyone that property values would only keep going up. Thanks to CDOs, what had been a small correlation problem to begin with had now, seemingly, been eliminated and, even better, it was insurable with a credit default swap. Thanks to all these factors, it seemed like these assets amounted to what bankers call a "free option". In other words, an asset whose upside is potentially unlimited, while there are zero downsides. As you can imagine, demand for these "free option" securities was very high indeed. What pushed that demand even further was the fact that these assets got AAA ratings. It is a legal requirement of many investment funds that they hold a specific proportion of their assets as AAA securities, and this requirement really pumped up demand.

Indeed, by the mid-2000s, the market demand for these securities was so great, the banks and brokers writing these mortgages just didn't have enough good borrowers to lend to. But, with demand pumped up like it was, and the financial sector focused on short-term gains, they didn't let the lack of good borrowers stop them. No, they just turned out securities packed with more and more risky debts, which somehow still earned that AAA rating.

Naked Credit Default Swaps

Now, earlier it was said that credit default swaps worked a bit like insurance against a borrower defaulting on their loan. But, as demand for these derivatives grew, credit default

swaps became something else, something closer to their true nature. They became more like gambling instruments- ways to bet on somebody else being able to repay their debts.

There are, of course, two main ways in which one can bet. You either bet that somebody is going to win, or that they will lose. In the case of credit-default swaps, the equivalent to betting on a win was to bet that a borrower would not default on their debts. In that case, the credit default swap worked more like insurance, in that the hope was that the borrower would successfully repay what was owed, but the insurance was there just in case.

But things were different with so-called “naked credit default swaps”, which were essentially bets on somebody losing. In this case, that meant you hoped the borrower would default, because only when that happens do you get to collect your winnings. There is no vested interest in the credit-taking party being able to pay. Quite the opposite, in fact. The more they lose, the more you gain.

The best way to see what that meant is to look at an actual example. The hedge fund Paulson and co, headed by Paul Johnson, had a list of 123 securities. They were backed by mortgages in Arizona, California, Florida and Nevada. All these mortgages had something in common, that being overheated house prices and, consequently, an expected rise in default rates.

Those 123 securities were presented to Goldman Sachs. What Goldman then did was to create a CDO monster bond out of those funds. This monster bond was known as ‘Abacus’. Although it was expected to fail, Abacus was engineered to qualify for a AAA rating, which meant it looked like a really safe bet.

Then, two things happened. One was that Goldman sold shares of Abacus to investors- investors who could not tell that what they were buying was really poor quality because, as was typical with CDO monster bonds, the complexity and opaqueness of Abacus made it way too hard to judge its quality, and these investors just trusted in the assurance of that AAA stamp.

But both Goldman and Paulson knew Abacus had been designed to fail, and while Goldman was selling shares of Abacus to investors, Paulson bought a naked credit default swap from American International Group or AIG, thereby giving his hedge fund protection against Abacus’s inevitable failure. When the inevitable happened, those investors, who thought they were buying securities as safe as safe could be, lost over \$1 billion. Thanks to the naked credit default swap, their loss was a gain for Paulson and co. They made \$1 billion in profit when they collected insurance money from AIG that taxpayers paid in the form of bailouts. And things were none too shabby for Goldman, either, since they kept around \$25 million in fees.

A Strange Kind of Casino

We have seen how the way credit default swaps were handled was less of an insurance policy, and more like a betting parlour. Wall Street itself has sometimes been compared to a gigantic casino too. But I would argue that it is worse than a casino for at least two reasons.

The first is that real casinos are a good deal fairer. The odds involved in every bet are presented for all to see, so all those involved know full well what kind of risk they are taking. Furthermore, the dice are not loaded, nor are the cards marked. There is no doubt some truth in that saying "the House always wins". The odds do tend to be stacked against the gambler. But at least you know what the odds are and the games are not fixed.

But, in the case of credit insurance, it has always been sold in a private market, and so there was no legal right to see how many deals are being made or at what price. In the case of credit default swaps, that led to such tactics as insuring the same debt over and over and over again, with the banks collecting commissions every time this increasing debt moved around the banking system.

So it's a low-visibility, high commission business. And what sort of people are running this business? As this quote shows, not the sort of people you can rely on to try and make the system as fair, transparent and impartial as it can be.

"I meet a lot of these people on Wall Street on a regular basis...And I am going to put it very bluntly. I regard the moral environment as pathological. [These people] have no responsibility to pay taxes; they have no responsibility to their clients; they have no responsibility to counter parties in transactions...they have gamed the system to a remarkable extent. They genuinely believe they have a God-given right to take as much money as they possibly can in any way they can get it, legal or otherwise".

Now some readers might be supposing that some hard-left Marxist was being quoted there. Far from it. These were the words of Jeffrey Sachs, who was one of the architects of the 'Shock Therapy' free market experiment that led to Oligarchy in Russia.

As we saw in the case of Abacus, "gaming the system" included disguising junk loans as AAA rated securities, the equivalent of loading the dice or fiddling the roulette wheel in such a way as to lure punters into laying down large sums of money you secretly know beyond all doubt that they will lose.

The second way in which the sort of gambling going on in Wall Street is unlike a traditional casino, has to do with whose money it is that is being gambled with.

In the case of places like Las Vegas, people gamble with their own money. But that's not how things were done on Wall Street in the runup to the 2008 crash. In 1999, certain changes were made to the rules and regulations surrounding banking and finance. Those changes affected a rule that had been in place ever since the stock market crash of 1929. What this rule did was forbid any one company from being a traditional bank, an investment firm, and an insurance company all at the same time.

The Financial Services Modernisation Act of 1999 overturned this rule, opening the way for businesses in the financial sector to grow in the era of mergers and acquisitions and become mega-businesses that were a combination of all three. That meant you could have one giant bank that could take depositors' money, but then, rather than keep it safe it could use that

money as collateral to fund investments in high-risk securities, while also insuring itself against losses.

Since the taxpayer ultimately stumped up the money for this insurance (and the sociopaths running this system hide the money they have taken from society in tax havens) it's the equivalent of a Casino where high-stakes gamblers are going for broke using other people's money, pocketing the winnings as private profit, but socialising the losses by having ordinary people who are not allowed into this exclusive club pay up when the deals go bad.

Playing Hot Potato With Debt

So, what these changes succeeded in doing was to turn the banking/ financial sector into a vast system where risk was not so much handled as turned into something transferable- a veritable hot potato of debt. There were no longer rules for capital requirements (or, if there were, they were insufficient) and that meant there was nothing to hold back those who regarded every loan as an opportunity to sell profit by selling insurance on something so big it would be a systemic threat to the system and so necessitate the socialisation of the consequences of flooding the (anti)economy with toxic debts, through government bailouts.

This all begs the question as to why something wasn't done about this situation before things got that bad. But one only need refer back to some of the things we have discussed in prior books in order to see why no appropriate action was taken.

For a start there were the outcomes of banks' definition of 'Deregulation', the drive towards 'Total Bureacratism/Total Marketisation', and Capitalism's need to commodify everything it possibly can. The only reason why commodification should not include legal and political systems is a moral one, but Capitalism knows no morality and so the drive towards Total Bureacratism/ Marketisation created an environment in which financial power could easily be converted into political power, and vice versa. Since the banking/ financial sector kept on making political donations and other bribes disguised as 'lobbying', the political class was doing very well out of this situation. And, in any case, the move towards Financialisation had seen the political class relinquish much of its control to 'Market Forces'. They were there to provide minimal management, not to change the structure in any meaningful way.

But what about the Public? They had grown up in environments that pushed the New Thought ideology which said that reality is not fixed but something the human will can manipulate. The only thing between an individual and great wealth was personal determination. If you wanted to be rich and successful, and believed you could be with sufficient fervour, then you would become rich. This message was amplified by the mega-churches whose 'pastorpreneurs' encouraged people never to voice any negativity and to act as if they were already rich. In the runup to the 2008 crash there were plenty of opportunities to live out the delusion that one had plenty of disposable income. This, after all, was a time when houses could be treated like ATMs, pre-approved credit card applications appeared in the mail box, and car loans offered zero percent financing. With so much cheap credit to hand, people were too busy spending to worry about banks luring pension funds into purchasing toxic bonds and other shenanigans that was bound to cause immense societal damage at some point.

So nobody really cared to notice what was going on. And what was going on was a transition, from a system dealing with high-risk investments in the gray areas of legality, to a system of outright fraud that was a bizarre combination of formidably complex mathematical models and stupid, short-term behaviour. The incentives of the system, which was arguably aligned with societal interests in the time of Levittown, were aligned no longer. Where there was once price integrity, now there was misinformation. Where there was once a search for long-term value, now there was simply a scramble for short-term gain. The savings of ordinary Americans were no longer being directed towards the sort of productive investments that led to a future that was wealthier for all; instead they were being funnelled into that weird casino we talked about earlier. As Dylan Ratigan said, "Banking, which had once served the economy, had become a vampire extracting the lifeblood of American Capitalism".

SIVs

Very attentive readers may recall a brief mention of something called a 'Structured Investment Vehicle' ('SIV'). This would be a good time to go into more detail.

The players who were issuing the toxic debts disguised as high-quality securities were well aware of the dubious quality of such loans. We can tell this was the case from the way they were loath to hold any of that seriously dubious risk on their own books.

This is where those SIVs came in. Since they wanted to get that toxic debt off their books, CDO issuers set up a system that enabled them to move their issuance and funding to separately created companies. These were those SIVs. The SIVs were isolated from the parent company's balance sheet, and they served one purpose. They were there just to collect the income streams coming in from mortgages and credit-default swaps, paying out this money to the different investors (such as pension funds, German regional banks and small Norwegian towns) that held them.

It seems obvious now that a Ponzi scheme that treated debt like a hot potato, where toxic debts were disguised as high-quality securities and insured with naked credit default swaps which actively encouraged huge losses so the holders of those swaps would gain enormously, would eventually just blow up like all speculative bubbles do. But at the time, people just didn't think that could happen. After all, why should it? Risk was hedged, yields were attractive, the bonds were insured and they had that quasi-governmental AAA stamp of approval. Prices were rising, and would continue to rise, thanks to self-correcting markets.

Of course, this turned out to be wishful thinking yet again. The credit markets, which were already tight before September 2008, froze in that month. This led to the price of securities collapsing. The effect that had was to restrict credit even further, until what had been going on in the repo market for the past few months was amplified into a general, panicked search for liquidity. The banks, which by now all held similar assets and liability, more or less simultaneously tried to dump those assets, and since the market simply couldn't handle the sheer volume of toxic assets being dumped, prices for those once highly coveted assets fell through the floor.

But What About the Safety of the CDO?

But hang on, weren't those securities designed in such a way as to lessen correlation and isolate the prudent investor from the reckless gambler? Well yes, that was the idea behind CDOs and credit default swaps. But it turned out that, actually, the design of those derivatives was the amplifier that boosted correlation, rather than lessen it.

Let's recall what the basic idea was. The CDO was designed to have different tranches. Those tranches were isolated from each other, and if they went bad they did so in reverse order, because the most secure bonds would keep on receiving incomes from the rest, only running out of that income stream if the whole system went bad.

But the whole system could not go bad (the thinking went) because different people held different parts of the bond, and the underlying markets were uncorrelated. Indeed, more than that, thanks to the structure of those CDOs, they were super-uncorrelated.

That was the fatal assumption. Remember the example given earlier, in which a CDO was created by blending a bit of Arizona suburb, a bit of Baltimore waterfront, and a bit of Manhattan property? Well, it turned out that adding Manhattan to Arizona and Baltimore in a single security made them correlated.

The reason why was the sheer volume of cash that was being invested in real-estate. What that did was to create one huge market in real-estate across the world. This one big market was one that became increasingly correlated to equities, above all the equities of the banks that were trading real estate.

When the least creditworthy debtors like those aforementioned NINJAs walked away from their debts, the income streams from the riskiest parts of the bond dried up. This triggered a search for liquidity among the investors up in the more secure tranches, which turned into a panic-fuelled asset dump driven by a general search for liquidity.

With more and more securities defaulting, those credit default swaps insurance policies kicked in, and that only made matters worse. The reason why was because, if enough of these claims happened at once, that led to the insolvency of the entire (anti)economic system. Either that, or the system would be declared "too big to fail", and bailed out.

So, let's sum up what happened with the subprime mortgage bubble. It all came about thanks to a web of risks between the 'normal' banking system and the much less regulated shadow banking system. That web was created through unseen links between mortgage bonds and CDOs that had the effect of amplifying the grossly underestimated correlation between assets.

This 'web' combined with the mergers and acquisition drive to disregard the old rule that high street banking, investment banking and insurance should be kept separate, to produce a strange kind of casino.

In this casino, poor families were sold mortgages that were way beyond their means, but the fact that they would have to default was hidden by disguising those toxic debts as securities

with a AAA rating. But, really, those securities were structured in such a way as to make defaults inevitable. While this was going on, the banks were getting involved in credit default swaps which began as a kind of insurance, but then evolved into bets on how long those inevitable defaults would take to happen. Both mortgage and bets were then packaged together, and those packages were sold on to institutional investors who passed them around the financial system like they were money, increasing debt with every movement, and ultimately the responsibility for paying off that debt fell to a giant insurance conglomerate that would have to be bailed out when, as it inevitably did, it looked ready to sink under the sheer weight of its resulting debts.

Placing the Blame

The result of all this was the subprime mortgage bubble, the 2008 crash and the austerity which followed. Once again, we see that none of the essential components of this bubble and crash can be blamed either on the state or individual morality. The most that can be said, regarding the state's involvement in all this, was that it failed to properly regulate the derivatives market. But then, why should we expect anything else, given what 'Deregulation' has come to mean, in the age of Total Bureaucratisation/ Total Marketisation?

As for individual behaviour, while there were obviously bad actors, we cannot really reduce the whole system to the sum of these parts. The behaviour of the whole was not reducible in this way. Those complex assets, that were supposed to reduce correlation, ended up amplifying the liquidity crunch that began in the repo market. As Mark Blyth said, "too big to fail was the inevitable result of highly leveraged institutions discovering that all the liquidity in the world really could all dry up at once".

What we have done in this chapter is to dig right down to find the essential causes of the 2008 crash. We saw how the crisis began in the repo market and how derivatives amplified it, but it could be argued that we are not yet clear as to how a crisis of this magnitude could unfold with no mechanisms in place to prevent it from growing into a systemic threat. In order to gain such an understanding, we need to look at a third quintessential factor which, once again, was a private-sector failing, rather than something that can be blamed on the State. This third factor was the Monetarist economic theory.

CHAPTER FOURTEEN

In the last chapter, our discussion ended by saying we should look to Monetarism if we are to complete our understanding of how and why the Great Recession happened. But, really, if we are to properly understand why the events of the noughties happened, we must first go back to the 1950s and look at the findings of an economist who worked decades before 'Monetarism' existed.

The Philips Curve and Stagflation

The economist in question was one Alban William Philips (1914-1975). In the late 50s, A.W Philips embarked on a study of one hundred years of Britain's economy, and what this study revealed was an inverse relationship between the rate of increases of money wages and the level of unemployment. In other words, if you had high unemployment levels, wages increased slowly, and when there was low unemployment, wages increased at a faster rate.

Being an economist, A.W Philips reduced the human behaviour driving all this to a statistical relationship, one that had notable implications for the economic orthodoxy of the time. What Philips came up with was a graph that became known as the 'Philips Curve'. What this graph shows is that, over a long period of time, the relationship between the rate of change in price and wages is statistically stable. This finding had implications for policy makers, because it showed that a given rate of inflation corresponded to a given level of employment. That being the case, people would have to settle for a trade-off between levels of inflation and unemployment. More importantly, the statistical relationship revealed by the Philips Curve implied that policy makers could use active fiscal management to get the economy to a point on the graph that corresponded to an acceptable trade-off of X inflation with Y unemployment.

So, by the late 1960s, Keynesian macroeconomics had been reduced to a statistical relationship called the Philips Curve. But then, as the next decade dawned, the economy behaved in a way which necessitated a very peculiar redrawing of the Philips Curve. The whole curve had to move both up and to the right of the graph.

The reason why was because, in the 70s, the trade-off of inflation for employment was replaced with an economy in which unemployment and inflation both rose together. This became known as 'Stagflation'.

Minority Economists Have Their Day

An economy which seemed to trade in inflation with unemployment dealt a serious blow to what was then economic orthodoxy. According to Keynesian theory, it is extremely unlikely such a co-existence could happen but here we were, experiencing economic conditions of Stagflation where unemployment and inflation rose together. That was certainly bad news for some- after all, a co-existence of high inflation and high unemployment does sound like the worst of both worlds. But, there was a minority who saw positivity in the fact that Keynesian macroeconomics had resulted in stagflation.

This minority was the marginalised economists who had never subscribed to Keynesian theory. To them, Stagflation was good in the sense that it revealed serious flaws in Keynesian macroeconomics. Therefore, the current economic orthodoxy should be thrown out and replaced with a rival view of market society that was more to their liking.

What was it about Keynesian theory that made it so objectionable to this minority group of economists? Well, basically, they did not approve of it, because Keynesian theory focuses on aggregates rather than individuals. Since it focuses on the macro world of aggregates (in other words, things like income and consumption) in a Keynesian world the true heroes of the economy are the Consumers rather than the Investors. After all, according to Keynesian theory, it is consumers' demands that determine what investors supply. There would be no supply of investment if there was no demand.

How, then, should policy makers ensure that necessary demand took place? According to Keynesian theory, if there are to be tax cuts, it should be the poor who benefitted. It would mean more money was left in their pockets, enabling them to go out now and consume, thereby boosting demand and supply of investment.

This minority of economists thought this was all wrong. To them, the focus should not be on the macro world of aggregates, but rather on the microlevel supply side of the economy. This shift in focus meant that, in contrast to the Keynesian way of looking at things, it was investors who were the heroes, not the consumers. This was because savings led to investment, and investment led to employment, and employment led to wages, and wages led to a consumption of the products workers were making, consumption that led to profits reinvested in the firm. If there was no supply of investment, there would be no demand, and no consumption. Forget about giving a tax break to the poor; give it to the Rich so that they can invest that money wisely.

The Core Beliefs of the New Economy

Now, the way this minority group thought the economy should work was not really a radically new one. Rather, it was similar in many ways to the classical liberal economic theory that had existed prior to Keynes. For that reason, the theory that this minority came up with, and went onto become orthodoxy after 'Stagflation' discredited Keynesian theory, became known as 'Neoclassical' economics.

The core beliefs underlying neoclassical (or neoliberal economics as it is more popularly known) would become formalised as EMH and RATES. That is, the 'Efficient Markets Hypothesis' and the 'Rational Expectations Hypothesis'. Neoliberal economic theory arrived at these formulations because of its two main assumptions, those being that economies are made up, fundamentally, of self-interested agents who maximise the pursuit of those interests, and that all prices, including that of labour, adjust in such a way as to equate supply and demand. Or, in other words, that "markets clear".

Who (or what) are those 'agents'? Well, the neoliberal approach to economics distrusted anything bigger than the individual, but that does not necessarily mean individual human beings. It can also mean individual firms, individual corporations, individual funds, that themselves are organisations composed of many people. But the point is that any account of

the behaviours of 'aggregates' such as financial markets have to be based (in this way of thinking) in prior accounts of the behaviour of those aforementioned 'individuals'.

Neoliberal theory insisted that its EMH and RATEX formalisations led to a bold conclusion: Systematic mistakes by markets are impossible. But how can that be, when we all know human beings are fallible creatures prone to making mistakes? Well, neoliberal theory does not deny that random individuals can and do make mistakes. But if, as the theory suggests, individuals do invest in being correct, then the market would eliminate error-prone individuals, until you end up with a world in which we all share the same true model of the economy. As Mark Blyth said, "left alone with common and accurate information, such individuals' expectations about possible future states will converge and promote a stable and self-enforcing equilibrium".

Missing, Presumed Irrelevant

In short, according to neoliberal theory, the market is (or will inevitably become) the reflection of individual optimal choices that together produce the "right price", meaning a price that corresponds to the true value of the asset in question. That is what is meant by "systematic mistakes by markets are impossible".

They may have been impossible according to neoliberal theory, but nevertheless systematic mistakes kept happening. The Neoliberals thought they knew why. It was because real markets were not as pure as their model of the economy. In real markets, the State kept screwing things up by getting in the way instead of leaving the market alone to find its own natural equilibrium.

Since, according to Neoliberal theory, the State really shouldn't do much at all apart from get out of the way, it hardly featured at all in this account of how the economy should work. Nor was the State the only thing missing. Also nowhere to be seen was financial regulation, the business cycle, booms, slumps and unemployment.

If such things existed in the real world, the neoliberals saw that as the result of Keynesianism having run the economy incorrectly, or because people looked at things the wrong way. Whereas Keynesian theory said that government should interfere to manipulate the level of demand, the neoliberal approach said it should not interfere. Whereas, according to Keynesian orthodoxy, a little inflation was acceptable to maintain full employment, it was not acceptable to the neoliberals.

As for unemployment, yes, that obviously existed. But from the Monetarist/Neoliberal perspective there was no such thing as involuntary unemployment. No, those who were out of work chose to be out of work, because anyone who wanted a job could always get one. It was just a matter of accepting the wage dictated by 'market forces'.

Not only should market forces and individual choice be seen as the true causes of unemployment, they should also, according to neoliberal theory, be seen as the forces driving financial markets. When taken together, EMH and RATEX led to a view in which free and integrated markets were the only way in which financial markets should be organised. As for the State, its role should be to do nothing. Well, not literally 'nothing', since it should

still provide courts, standards of weights and measures, and defence goods. But it should stop interfering in the economy and leave the free market alone to work its magic.

The Flawed Assumptions Of An Appealing Idea

This was a very appealing idea so far as those working on Wall St were concerned, because it looked very much like a justification to let the financial system do what it liked. And why not? After all, hadn't EMH and RATEX proved, theoretically, that finance could do no wrong, by definition? Ok, in reality, such things as deliberate fraud and insider trading were problems that came along from time to time. But they would surely be weeded out in time. 'The Market' was, after all, made up of self-interested agents, and whether those agents were individuals or financial firms, they would, when acting in an efficient market, make optimal trading decisions, with such outcomes improving everyone's welfare.

So there was no need to regulate financial markets? No, not quite. The neoliberal stance was not that banking should operate absent of any regulation whatsoever. We've already seen how that would be impossible. Rather, the job of deciding what regulation there should be, should be left up to the banks themselves. For, as Mark Blyth reckoned, "since they are the ones with 'skin in the game', anything they get into is good for everyone".

This view of how financial regulation should work resulted, when combined with the idea that risk is individual, in a market that was thought to work in a way that meant risk could be commodified. That is to say, it could be turned into something that could be calculated, sliced into 'portions', traded and (ideally) held by rational investors who knew what they were buying.

As has already been said, Neoliberal theory looked at the economy from a micro level perspective. From this point of view, it seemed obvious that if you made the parts safe, then the safety of the whole system would naturally result. And the parts had been made safe. What, after all, was the 'shadow banking' system doing? It was serving real banks by augmenting liquidity and assisting risk transfer. As well as that, you had those derivatives, opening up the possibility of packaging risks and selling it onto investors- investors who, by virtue of wanting to hold that risk, were best suited to hold it. That was another level of safety.

Finally, there were the banks themselves. They were the ones ascertaining the level of risk, using models they designed themselves, and who could be better suited to judge that risk than the banks who, after all, had "skin in the game"?

So, all the parts of the financial system were imagined to be safe- mortgage bonds, credit default swaps, bank risk models- all of it. Looking at the economy from the micro-level neoliberal perspective with its EMH and RATEX hypotheses, led to an attitude that the only thing that could arise out of the trading decisions of super smart agents would be financial markets that are efficient and in equilibrium. There was no considering any possibility of crisis, apart from those arising from moral hazard (the fraud and insider trading mentioned earlier) or a state-induced political shock.

But the 2008 crisis cannot be blamed just on the ill-meaning actions of a few bad actors. Much more than that, it was the result of something that seemed impossible to a Neoliberal/Monetarist perspective, namely the fact that, when you meshed together elements that were intended to make the world safe, what you end up with, sometimes, is a world that is incredibly less safe than it was before all those 'safe' components were integrated into one big system of risk manipulation. So, the logical flaw was the supposition that the whole could not be different from the component parts. As Mark Blyth said, "it turned out that the whole was quite different from the sum of its parts, because the interaction of the parts produced outcomes that were miles from...expectations".

That was not the only flawed assumption, for we should also acknowledge the obvious flaw in the whole idea that, since the banks had "skin in the game", they were therefore the best people to judge the risks they were taking using models they themselves designed. Actually, as we have seen, they did not have "skin in the game", because those risks were not being held on their books but rather moved into SIVs.

So there we have it. The State really had very little to do with the essential causes of the 2008 financial crash. After all, did the State start the run on the repo market? No. Did the State design the derivatives that amplified the crash into a systemic threat? No. And, finally, what was the orthodox economic theory operating at the time of the bubble and crash, designed to do? It was designed to keep the State as far away from market forces as possible; to write it into irrelevance beyond maintaining legal systems, standards of weights and measurements, and defence goods. As for the regulations guiding behaviour in the financial sector, the State's duty was just to sign off on whatever "deregulation" suited the biggest players in the weird casino that Wall St and its equivalents in other cities had become (and we know by now that "deregulation" does not necessarily mean fewer regulations).

As we have seen, all this actually entailed a thorough entanglement of private, military and state bureaucracies. But it was presented as the workings of a "free market" that supposedly wanted as little state interference into our lives as possible. Really, though, the 'freedom' being practiced was the 'freedom' of the minority that get to treat debt like it does not matter, to impose costs on the rest of us who are not in that exclusive club.

CHAPTER FIFTEEN

At the end of the last chapter, we completed the case for blaming the private sector, rather than 'the State', or just 'personal irresponsibility', for the essential causes of the 2008 crash. Before moving on to discuss the aftermath, we should acknowledge that not everybody agrees that the private sector was to blame. Republican conservatives would rather cast Liberal Democrats in Congress as the villains, rather than Wall St financiers and bankers (from whom they receive massive financial support). The Republican finger of blame also points to a US law known as the 'Community Reinvestment Act', which set targets for mortgage lending to disadvantaged neighbourhoods.

In short, the counter-argument to the one laid out in the last few chapters is that, actually, the housing boom was caused by too much government regulation. What all those rules and regulations did was force Fannie and Freddie to subsidise dodgy lending to the sort of people who would never qualify for those mortgages under genuine 'free-market' conditions- you know, poor people, immigrants, minorities, people like that.

An Argument That Holds No Water

That's the argument, but there is little evidence to support it. The bubble was driven by the private sector, particularly its least regulated components (i.e, 'shadow banking'), not by Fannie and Freddie.

If you want some justification for that assertion, just seek the answer to the following question: Which had the higher default rates, loans created and packaged by mortgage lenders and Wall St, or the loans that were bought and guaranteed by Government-Sponsored Enterprises like Fannie and Freddie? It's actually the former that was dishing out loans with a higher default rate.

Now, it is true that Fannie and Freddie guaranteed the mortgages of increasingly uncreditworthy borrowers. But why did they do this? The Republican explanation is that this was something they were forced into by overregulation. But, did Fannie and Freddie's regulator really force them to inflate a housing bubble? If anything, the regulator had the effect of slightly reducing the damage GSEs did. The regulator accomplished this by stopping the massive accounts frauds, which were one of the ways GSEs had been gaming the system.

Moreover, it was not really things like regulations or affordable housing goals that caused Fannie and Freddie to behave recklessly, but rather a scramble for annual bonuses and stock options. In other words, decidedly private-sector incentives.

As for the accusation that GSEs caused the bubble after having come under liberal democratic pressure, we can lay that argument to rest by remembering when the worst behaviour occurred, which was a time when the Republicans controlled the White House and both houses of Congress.

Then there were the eventual losses. Why did GSEs suffer those losses? Was it because they had been loan buyers, insurers or securitisers? No. The losses happened (or, at least,

half of them did) because Fannie and Freddie had behaved like investors driven by the same toxic incentives as the wolves of Wall St. After all, why did Fannie and Freddie buy and guarantee all those securities? It wasn't liberal political pressure, or a sense of leftist social responsibility that drove this behaviour; it was driven by their executives and traders seeking investments based on short-term performance, with no 'clawbacks' in the event of things going bad later on. In other words, the same toxic incentives that was driving speculators in the private sector. We can look to the same reasons in order to understand why they started buying higher-yield mortgages after the bubble was underway.

Why Scapegoating Is Not An Appropriate Term

So, what are we to learn from all this? Is it the case that the Republicans are scapegoating the government by blaming the 2008 bubble on overregulation and leftist social policies?

I think 'scapegoating' would not be the appropriate term to use. It is properly used when fault is attributed to some person, group etc who are entirely blameless. This is not really the case when it comes to the government's part in the subprime mortgage bubble. Nobody can deny that political pressure played a small role in influencing the purchases GSEs were making, and it's also fair to say that Fannie and Freddie were major participants.

However, political pressure was not the primary factor behind the purchasing decisions of GSEs- those all came firmly from the private sector. And, while they may have been major participants, Fannie and Freddie were not the major beneficiaries of spiralling property values, and nor did they start that bubble. They did cause a lot of damage due to their size, and they are not blameless by any means. But, really, they were minor players and the bulk of the blame is properly attributed to private sector forces.

The Demopublican Party

Another thing we should avoid would be to blame the Republican Party for all this. It is true that this was the Party that controlled both the White House and both houses of Congress. But, really, would things have been different had the Democrats enjoyed that control when the bubble happened?

I think not, for the following reasons. Firstly, we have already seen that both the Left and the Right want to see home ownership increased (they just have different motivations for doing so). Also, the Democrats would have faced the same globalist incentives, such as China's policy of flooding Western markets with cheap goods and cheap money, that led to those who happened to have control to bring about a situation in which homes were treated like ATMs. So, the Democrats would most likely have done the same had they been able to exercise the control that the Republicans enjoyed.

We should also remember what Globalisation and Total Bureaucratisation/ Total Marketisation actually brought about. It was a thorough entanglement of private, military and state bureaucracies, not a partial entanglement that only affected the Republicans and left the Democrats untouched. What needs to be understood is that, thanks to a combination of Globalisation, American economic decline, and the commodification of political and legal systems, there has been a profound realignment of American politics. Whereas, for much of

the 20th century, the Republican Party was reliably the party that put business interests first, whereas the Democrats were on the side of the Blue Collar worker, Unions and the poor, now (at least when it comes to their funding sources) there's really nothing to distinguish them, and we should really speak of the 'Demopublicans' as a single duopoly whose top priority is, by far, protecting America's economic oligarchy.

If it seems strange, even absurd, to assert that there is no difference between the Republicans and the Democrats, that's because there are differences, and major ones at that. But all such fierce and partisan conflicts are very much within the sphere of 'values' and social issues- things like abortion, gun control, gay marriage, more versus less socialised healthcare. These are all social and 'values' issues that are important to the popular bases of the two parties and, therefore, when it comes to campaigning to control the political system, each party can legitimately claim defeat will mean painful losses.

But, while it really does seem absurd to say the two major parties are colluding and under the influence of a single oligarchy when we consider how they represent themselves in the 'sphere of values', we get a very different outcome when we move over to the 'sphere of value'. When we do, we see that, when it comes to issues of critical concern to the financial sector and America's economic oligarchy, the actions taken by the two parties are so similar we can truly say that America's politics is dominated by a cartel, or a political duopoly formed by the two parties, and the top priority of this duopoly is to ensure political, financial and legal systems put the interests of big business and political and financial elites way, way before the interests of the rest of society.

Distraction Tactics

We saw earlier how, in Medieval times, the Aristocracy dealt with the danger of the minor nobility forming collectives with the peasantry and overthrowing the current ruling class via organised strength, by providing an elaborate hierarchy of titles and other tokens to squabble over.

I would say the Demopublican Party has adopted a similar strategy. The only difference is that, rather than distract the middle and lower classes with hereditary titles and popular festivals, they are instead distracted and divided by social and 'values' conflicts. What would happen if the people were not distracted over 'woke' or 'politically correct' hot button topics? It does not seem too ridiculous to suggest that, absent of such distractions, the feeling that the 'free market' really means socialism for the super-rich and the harshest form of individual responsibility for the poor, would grow and grow until all those who are not in that exclusive club who get to treat debt more like a gift than anything seriously expected to be repaid, would organise themselves into an overwhelmingly powerful revolutionary force.

But, those distracting 'values' issues are in place, and they take attention away from the fact that, as the power of the financial sector grew, that resulted in a shift of the entire political spectrum toward the ultra-wealthy on economic issues. When it comes to where they stand on the regulation of Wall St and other concentrated and regulated industries, there is now virtually no difference between the two Parties. As one US senator once put it, "does the government regulate Wall St, or does Wall St, with their billions and billions of dollars, regulate the government through lobbying and campaign financing?".

Behind that rhetorical question there lies a sad truth. The various forces we have been uncovering in this series, 'Managerial Feudalism', 'Total Bureacratism/ Total Marketisation, Globalism, Neoliberalism, Financialisation, have succeeded in rendering all forms of in-system activism more or less impotent. There's no point in voting because the Demopublican duopoly will always get into Power and set up a government aligned with the interests of the financial elites. There's also no point in the sort of protests that wouldn't meet with violent oppression from those weaponised bureaucrats known as the Police, because what power or influence can waving signs and chanting slogans have, when there are something like 28 officially registered lobbyists in Washington for every single member of Congress, and each one of them has pockets vastly deeper than yours?

No legitimate form of protest would have changed the events of the mid-2000. Vote however you like, write whatever you want on protest banners, it would have made no difference. The Demopublican party would still have won and the same mostly private incentives that caused the bubble would have inflated it, until it burst.

Burst Bubbles and Bailouts

And burst it did. That bursting of the subprime mortgage bubble marked the end of a dream, a fantasy. The reality was that it was actually the Chinese politburo's system of exporting cheap goods and cheap money that fed the boom and kept inflation low, but at the time very few experts credited a foreign 'communist' state for having brought stability to the markets. Instead, they let their faith in IT systems lure them into believing the stability came about thanks to computer systems running mathematical models that bundled and tranced masses of loans into commodifiable securities, and then hedged and balanced those securities in a way that maximised returns while eliminating risk. As we can tell by former Prime Minister Gordon Brown's (b. 1951) bold declaration that there would no more boom and bust, they were pretty confident that the system would find its own equilibrium. The neoliberals had promised they would create a new kind of market democracy that would be stable, and they had delivered.

But such promises had been made elsewhere, most notably in Southeast Asia and Russia. Time and again, what had actually resulted was chaos and instability, the very opposite of the 'new democracy' that had been promised.

Now that chaos had struck the very heart of the West. The debt that the enormous wave of speculation was based on had never really been hedged and balanced; it had been hidden and allowed to grow until there was enough toxicity to threaten the integrity of the entire global economic system. At that point, the banking/financial elites took the same action they had taken when the Southeast Asian bubble burst, which was to mobilise political power to rescue themselves.

In 'The Big Short', the film's anti-heroes spend most of the movie wondering how those working in financial markets can be capable of developing such formidably complex mathematical models, and yet at the same time be pursuing short-term gains that are so blatantly stupid. How can anyone be such a genius and such a moron at the same time? But when the bailout happens, they have to cast the situation in a new light.

“They knew. They knew the taxpayers would bail them out. They weren’t being stupid. They just didn’t care”.

Now, one would have to assume that there would be riots on the streets if Wall St spivs just got the government to conjure up \$13 trillion out of thin air, with no justification beyond wanting to save financial and political elites from a mess they themselves chiefly created. There had to be some kind of further justification that was used to sell the idea of the bailout to the larger community.

311 million people live in the USA. 158 million of those people have jobs. A very large percentage of working people- 72 percent- exist in a state of perpetual financial anxiety. Even though they may well be working at least two full-time jobs, they have little to no savings, and very little in the way of social safety nets (since that kind of support is anathema to the fanatically pro-Capitalist USA). The only thing between them and financial calamity is their paycheck, and they don’t need to miss many of them before they get into very deep trouble indeed. They live paycheck to paycheck, and would struggle to raise \$2000 on short notice.

This is, of course, all perfectly consistent with Capitalism. That, after all, is an (anti)economic system designed to relentlessly concentrate wealth, so of course you end up with a few oligarchs who ‘earn’ a year’s salary in an hour, and retire with much more wealth than most families could ever earn in several lifetimes, while a much, much larger majority find themselves barely able to raise themselves above the poverty line, or if they do so raise themselves, it’s done by living off credit cards and payday loans.

The problem is, there are something like 70 million handguns in the USA, and we’ve all seen from harrowing footage of ‘spree killings’ that disgruntled citizens have access to high-calibre assault rifles that put military levels of personal combat into their hands. In short, the ‘right to bare arms’ has placed an enormous amount of firepower in the hands of the American people. Now imagine that all 72 percent of that populace, kept on the breadline by Capitalism, woke up one day to find the ATMS no longer have any money in them and their wages are no longer being paid. How much damage could they inflict if they got angry enough to grab their guns and assault rifles and go out and riot?

That was the fear and the justification behind the Bailout: Not just the cost of letting the whole system meltdown (that cost would have been the sum of those bank assets, which amounted to 61% of GDP) but also secondary costs like millions of job losses, a reduction in output, and the damage that 70 million handguns can inflict.

An Unjust Price

Was it worth paying \$13 trillion to save a system deemed “too big to fail”? I guess we’ll never really know what the costs would have been if the (anti)economic system had been allowed to fail. But one thing we do know for sure, and that is that there was nothing fair or socially just about that bailout.

At the very least, you would expect two conditionalities to come with a state handout of \$13 trillion. Firstly, that the costs would be shared according to both ability to pay and responsibility for the bust and, secondly, that massive restructuring and reforms or, even better, a radical revolution in the way economies and societies are structured, would be implemented.

But nothing like this actually happened. Instead, the elites took the money that the State (and, ultimately, the American people) gave them, and instead of doing any restructuring they used that money to pay themselves huge bonuses and lobby congress to kill big reform. Meanwhile, the state's bailout meant that all that toxic and, in many cases, fraudulent private debt was turned into a public liability that imposed crippling austerity on the masses.

In 'The Big Short', Mark Baum expresses his concern over how the bailout will affect society. "I have a feeling that in a few years people are gonna be doing what they always do when the economy tanks. They will be blaming immigrants and poor people".

He was partly right. What actually happened was that the blame for the crash was pinned on the government, yet another example of elites in the banking/ financial sector taking advantage of the fact that most people think 'Bureaucrat' means government official or civil servant, an attitude that entails ignoring the fact that it is a term that applies just as much to corporate and military paper-pushers, and, even more than that, the fact that even when the State part of Total Bureaucratisation/ Marketisation only plays a minor role in some sort of crisis, Populism is always ready to condemn it, as though it were the only culprit and if only we could reduce its reach or, better still, eliminate it altogether, these sort of things just wouldn't happen (and we have seen how such attempts to limit the reach of the state actually end up massively increasing the amount of rules and regulations, as per the 'Iron Law of Liberalism').

As well as the usual "blame the government" tactic, we also saw the rise of populist leaders. Either these guys really were idiots, or they pretended to be. Whatever was really the case, their antics turned them into targets of ridicule for the liberal elite, who found they got great ratings boosts when they gave clowns like Trump media exposure. It probably seemed like a great strategy: Knock all other candidates out of the race for leadership, leaving the electorate with a choice between a multi-bankrupted moron with zero political experience and a seasoned politician from a family that had already held the highest office in the land. How could the Democrats possibly lose?

Unfortunately, the liberal elite who helped bring about this binary choice between a moron and a very experienced politician failed to factor in two crucial points. The first was that Trump actually did not look like a moron to many of his voters, because he perfectly fitted the less intelligent person's idea of a rich, successful, and smart man. But, more importantly, a great many ordinary Americans had come to possess such a profound dislike of those they thought of as the 'Liberal Elite', and the more Trump was mocked by that class, the more he seemed like "one of our own" in a "the enemy of my enemy is my friend" kind of way. People flocked to his political rallies, where they were told half truths such as "the elites are to blame for the hard times you have endured" (true) "but we will fix the system and make America great again" (false). And, of course, populist resentment against immigrants and poor people was whipped up, just as Mark Baum foresaw.

CHAPTER SIXTEEN

Land of the Free? Or Land of the Deluded?

When the likes of Mary Baker Eddy and Phineas Parkhurst Quimby sought to create a positive alternative to the grim outlook of Calvinism, they imagined the universe to consist of nothing but an all-nurturing, all-supplying benevolent spirit. Humanity, as part of this maximally-beneficial entity, had but to exercise their powers of positive thinking, banish all negative thoughts, and everything would turn out all right.

The 2008 crash showed what sort of consequences could come from acting on such principles. For, as Ehrenreich asked, “what was market fundamentalism other than runaway positive thinking? In the ideology of the Bush administration and, to a lesser extent, the Clinton administration before it, there was no need for vigilance or anxiety about America’s financial institutions because ‘the market’ would take care of everything. It achieved the status of a deity, this market”.

All the sciences have to make simplifying assumptions and Economics is no exception. According to Mark Braund and Ross Ascroft (1977-2014), “neo-classical economics looks only at the factors influencing the investment and consumption decisions of individuals and firms. It focuses on how things would look in an imaginary world where all participants shared full and equal knowledge, not only in the market but also of the consequences of their decisions. It also assumes that everyone faces the same choices in life”.

These are dubious claims, to say the least. Take, for example, the claim that participants share full and equal knowledge. That being the case, we would expect every individual to be privy to all information, whether it be good news or bad. But this can hardly be said to apply in a corporate environment where celebrity CEOs floated high above the concerns of ordinary citizens in a bubble of luxury, surrounded by subordinates conditioned to bring them nothing but good news. “I’m the most lied to man in the world”, was how one CEO explained his situation.

Nor could it be said to apply to ordinary Americans, those folk who, if they wanted to keep their jobs, were obliged to attend seminars and read material by so-called experts armed with a pseudoscientific mix of economics, quantum physics and mysticism. As one life coach insisted, “with quantum physics, science is leaving behind the notion that human beings are powerless victims and moving toward an understanding that we are fully empowered creators of our lives and of our world”. Assuming this was how reality worked resulted in the creation of working environments where the entrenched cult of optimism made it advisable to conform lest you be targeted for “releases of resources” or whatever euphemism for layoffs the company used.

Outside of work, the American citizen was preached to by TV evangelists broadcasting their ‘prosperity gospel’ that God wanted true believers in optimism to have it all (a situation that inspired a 2008 Time article called ‘Maybe We Should Blame God For The Subprime Mortgage Mess’). They were advised by (in Ehrenreich’s words) “professional optimists [who] dominated the world of economic commentary...Escalating house prices were

pumping the entire economy by encouraging people to use their homes like ATMs...taking out home equity loans to finance surging consumptions and housing prices were believed to be permanently resistant to gravity”.

According to Washington Post columnist Steve Pearlstein, “at the heart of any economic financial mania is an epidemic of self-delusion that infects not only large numbers of sophisticated investors but also many of the smartest, most experienced and sophisticated executives and bankers”.

An economy infected with an epidemic of self-delusion and where pressure is on to conform to a ‘yes-man’ culture of positive thinking is hardly conducive to bringing about the neo-classical concept of human beings as perfectly informed and rational agents.

The Choices of Us and Them

Now let’s move on to the other fundamental assumption of neoliberalism, that being that we all face the same choices in life. Here, I will just ask the reader to take a person living paycheck to paycheck, working in a corporate environment whose advice to those facing unprecedented levels of ‘restructuring’ and ‘career-change opportunities’ (more euphemisms for layoffs) is “deal with it, you big babies!”, and compare their situation to the likes of Jack Welch (1935-2020), the CEO who laid off over a hundred thousand workers, who retired with a monthly income of \$2.1 million, was given an \$800,000-a-month Manhattan apartment, a Boeing 737 (also courtesy of the company) and free security guards for his many homes. Does anyone seriously believe that we are talking about two people with exactly the same choices?

When we make references to the ‘free market’, what, exactly, is this ‘freedom’ that we are referring to? The neoliberal ideologue would no doubt claim that it refers to the freedom to partake in voluntary exchange, echoing Ayn Rand’s words, “an honest man is one who knows that he cannot consume more than he has produced”.

But if that is the case, then it is difficult to imagine how all those toxic assets could have been accumulating in the financial sector, or how ‘borrowing’ could have pushed the national debt beyond ten trillion dollars. I think a more apt description would be “the free market is a competitive environment in which players strive to achieve disproportionate material and political advantage over others, via whatever methods they can get away with”. This definition leaves open the possibility that some will try to get ahead through the spreading of false information intended to exploit human vulnerabilities in a profitable way, actions which, while obviously immoral, would also not be opposed in a purely Capitalist world, for the simple reason that Capitalism is amoral and therefore incapable of telling the difference between legitimate and illegitimate forms of pursuing profit.

All Capitalism cares about is whether a profit-making scheme works or not. It cares nothing for the underlying honesty or morality of such actions. All it can do, absent of any outside moral, regulatory structure, is to make those illegitimate forms of profit making fail, while promoting the more honest forms that appeal to the best in us in order to sell well-made products we genuinely need to live happy, wealthy lives. “Getting away with it” depends on how clued up and vigilant the other players are to whatever deceptions the cheats dream up,

and whatever regulatory structures are in place to curb such behaviour. But, in Nature, parasites respond to the environmental pressure to defend against them by evolving ways to evade such defences or even to alter the minds of their victims so the latter work to support and nurture them rather than fight off those bloodsuckers. Market competition imposes the same evolutionary results on human behaviour.

Gillian Tett (b. 1967) of the Financial Times has commented on how an elite “try to stay in power, and the way they stay in power is not merely by controlling the means of production but by controlling the cognitive map, the way we think. And what really matters in that regard is...what is left unstated, unsaid”.

In a corporate environment amidst a consumerist world feeding off of New Thought ideology, there was quite a lot being left unsaid. As Adam Michelson, senior Vice President of Countrywide said, “these are the times when that one person who might respond with a negative comment or a cautious appraisal might be the first to be ostracised. There is a great risk to nonconformity in any feverishly frothy environment like that”.

Indeed, America in the early 21st Century was riding high on optimism. Communism had been defeated, and the turbulent world of financial capitalism was sold to the public as a rising tide that lifts all boats. According to Robert Reich (1946), “optimism...explains why we spend so much and save so little...our willingness to go into debt is intimately related to our optimism”.

This optimism has three roots. First of all, there is the mythstake of barter, which led us to believe in a fantasy beginning to ‘money’ in which it somehow evolved out of friendly swaps in a world absent of debt and States (when in fact, for the past five thousand years, commercial markets have been the creation of states, and before that human economies had little to do with the commodification of stuff that typifies ‘markets’ as we understand them) and that therefore we should be able to run modern markets with little to no State intervention; the Calvinist religion that helped the founders of the USA tame the Wild West, and the New Thought ideology that attempted to undo the mental damage such a punitive religion could impose, but actually ended up being just as harsh on ‘inappropriate thought’ as the Puritanism that preceded it. The only difference was that it was negative thinking, rather than pleasure seeking, that was regarded as sinful.

As Ehrenreich explained, “for centuries, or at least since the Protestant Reformation, Western economic elites have flattered themselves with the idea that poverty is a voluntary condition. The Calvinist saw it as a result of sloth and other bad habits; the positive thinker blamed it on a wilful failure to embrace abundance. This victim-blaming approach meshed neatly with the prevailing economic determinism of the past two decades. Welfare recipients were pushed into low-wage jobs, supposedly in part to boost their self-esteem; laid off and soon to be laid off workers were subjected to motivational speakers and exercises. But the economic meltdown should have undone, once and for all, the idea of poverty as a personal shortcoming...the lines at the unemployment offices and churches offering free food include strivers as well as slackers”.

The 'Kitchen Table' Debate

In 1959 a famous debate known as the 'Kitchen Debate' took place. The participants of this particular debate were the then president of the United States, Richard Nixon (1913-1994) and the then Soviet leader, Nikita Krushchev (1894-1971). During this debate, Krushchev made a comment that, amazingly, did not meet with gales of derisive laughter. He admitted that, yes, the USA was currently the strongest economy in the world. But the USSR held the number two position, and within seven years the living standards of those in the Soviet Union would surpass those of the United States.

Remember, that this was 'Communist Russia' he was talking about. Today, when we think about the economy of that country, what springs to mind is a basket case system that foolishly tried to replace market dynamics with something more rational and managerial, and ended up with a broken society with needless surpluses stockpiling unwanted goods, and shelves empty of the produce people actually did want. So, yes, one would expect a comment that this society would soon beat the United States and become the world's strongest economy, to be dismissed as obviously wrong.

But that's not what happened. Instead, when Krushchev predicted that his country would soon surpass the USA economically, many Americans feared that might actually be the case.

The 'Cold War'

If you think about how these two countries stood in relation to each other, you'll see why such a claim sounded all too plausible. The decades of the 50s and 60s were ones in which two superpowers were locked in a contest of economic, political, and military supremacy known as the Cold War and the Space Race.

With some further thought, it should be obvious that Russia should never have been able to rival the USA in either case if the narrative we now like to tell ourselves was really true. The 'Cold War' of course refers to that delicate balance of power between rival countries equipped with enough firepower to destroy world civilisation.

That terrifying destructive capability came in the form of a stockpile of intercontinental ballistic missiles carrying thermonuclear weapons. Such a weapon is hardly the sort of thing a bunch of disorganised halfwits can just cobble together in some rundown factory. It requires handling some incredibly dangerous materials like plutonium and the triggering mechanism was described by John von Neumann (1903-1957) as the most complex mechanism humankind had ever assembled (although, he was actually talking about the far simpler fission bomb, not the even more sophisticated hydrogen bombs that were the strategic 'defence' both the USA and USSR were equipping themselves with).

Furthermore, it was not enough to construct a device whose purpose is basically to give birth to a star (albeit one with a lifespan measured in seconds rather than billions of years). That device also needed a delivery vehicle that could hit enemy targets on the other side of the world. That added yet more complexity to an already technologically-advanced machine. Finally, it was not sufficient to build one such weapon, but to have the means of stockpiling

so many, any would-be aggressor could be in no doubt that a hostile act really could be an apocalyptically costly move.

Now, you can question whether or not it was a good thing that so much scientific knowledge and engineering skill was coordinated and utilised to make something that could destroy the world should some country with one kind of economic/political ideology refuse to accept the rival system of another country. But one thing is for sure, and that is that building the infrastructure of the Cold War required a staggering amount of resource gathering, engineering and logistics. It was a challenge that the USSR was equal to. Certainly the West thought so, as nobody doubted that the USSR was the United States' rival superpower.

And yet, we're supposed to believe that this is the same country whose economic system was so shoddy and broken, figuring out a way to keep shelves stocked with everyday goods was a challenge beyond the capabilities of its people.

The 'Space Race'

We arrive at much the same paradox if we consider the 'Space Race'. Calling this tentative step beyond the confines of our planet a 'race' gives the impression that the USA thought Russia was a serious rival in the quest to conquer space. You would after all, feel very relaxed about a country that is hopelessly behind you, technologically and economically speaking. Again, it's by no means easy to build a machine that can launch equipment and people into space and then return them safely to Earth. Just ask Elon Musk, whose own rockets are just as likely to explode rather than complete their intended job. And yet the Russians, you know, those guys who cannot build a TV set that doesn't just explode, not only managed to build working rockets, but pioneered humanity's steps into space, with the first artificial satellite (Sputnik) and the first man in space (Yuri Gagarin (1903-1950)) as Soviet bragging rights.

There were indeed staggeringly sophisticated technological achievements associated with the Cold War and the Space Race, and you do have to wonder how the USSR did as well as it did, given the narrative that is so familiar today, of any 'Communist country' being a basket case where nothing works and is left far behind by Capitalist countries with their incomparable superiority.

When Things Looked Different

Well, there's actually a pretty simple answer to that. It was only after 'Communism' was defeated that the narrative became one of the USSR being the exemplar of a dysfunctional society. Go back to the 30s, though, and things looked very different. In that decade, the United States was suffering from the Great Depression after Capitalism caused the greatest financial crisis the world has ever seen. But as for the Soviet Union, its people were enjoying economic growth rates of an unprecedented yearly rate of 10- 12 percent. No wonder, then, that, in the 50s and 60s, many in the West took the claims that Russia would become the most powerful country in the world, and maybe even the first to colonise space, very seriously indeed.

And so, the United States got involved in a 'Space Race' against its Cold War rival. Both the Cold War and the Space Race had an interesting effect on how the United States' productive processes were popularly perceived. The truth was that, by the fifties and sixties, factories had experienced a slowdown in the pace of technological innovation. But, thanks largely to side effects of rivalry with the Soviets, that slowdown was disguised. The Space Race required an enormous input of industrial processes, and the 'threat of Communism' incentivised US industrial planning to find ways of using what technologies were at hand to create a general feeling that everybody stood to achieve prosperity under the guaranteed progress that Capitalism would provide. Had there never been a credible-seeming alternative coming from radical working-class politics, it's highly doubtful that Capitalists would have put so much effort into presenting an economic system that is fundamentally designed to increase power and exclusion as something that could be universally beneficial.

Grand Soviet Dreams

Meanwhile the Soviets had their own grand dreams. So far as many of the West are concerned, having got pretty much all of their understanding of 'Communism' from propaganda that opposed it, the Communists only had one major ambition, and that was world domination. Once that was achieved, we would be forever trapped in a grey and uninspiring world run by faceless bureaucrats whose love of rules and regulations would suppress all creativity.

It was of course true that the Socialist system was run by bureaucrats, but the representation of such people as dull, unimaginative types bent on stamping out creativity and entrepreneurship once and for all, falls apart once you take into consideration what Bureaucracy is for, according to the Lefist vision of Utopia. To recap, this was a vision of a world in which we have successfully built bureaucratic and administrative structures that automate the necessity to take care of the dull, dirty and dangerous aspects of human life, and in so doing set the human spirits free to realise its full individual, collaborative and creative potential.

To that end, the Soviet bureaucrats dreamed up some pretty big dreams as it set about devising plans to solve the big problems humanity faced. To give one example, there was a plan to solve the problem of world hunger by breeding *Spirulina* (it's a type of edible bacteria) in lakes and oceans.

It is said that the road to Hell is paved with good intentions, and many of those grandiose plans had unintended negative effects. Some were so grandiose they had no chance of getting off the ground, which just wasted time and manpower that could have been put to more practical use. Worse still, sometimes those dreams of making the world a better place were put into effect, only for the result to be an ecological or social disaster.

But, at least they genuinely tried to solve problems once and for all, and devised many grand and peaceful projects to achieve such goals. This they could do because Communism is in no way motivated to perpetuate the profit motive, and so it makes no sense to keep on servicing a problem when it could be solved once and for all.

In contrast, the Capitalist system is very incentivised to perpetuate the profit motive, because there is no 'Capitalism' without it. So, ironically for a system always promoted as being synonymous with 'freedom', we end up with a world in which nothing is free but commodified and priced, and where it's always better to service an ongoing problem rather than eliminate it once and for all. Given these contrasting motives, it's little wonder that, even in the 80s, the Soviets were still dreaming of grandiose and peaceful plans, whereas the only grand plan the USA poured resources into was a military project- 'Star Wars'- designed to sink the Soviet Union.

Preventing Escape

Or, consider the potential of the factory system. Karl Marx and Friedrich Engels certainly had some negative things to say about Industrial Capitalism. So much so in fact that they became known as its most famous detractors. But they did realise that this was a system that had ushered in an era of unprecedented scientific advance and technological innovation and that this process, if allowed to continue under the coercive laws of competition as laid out by classical economists, would bring about the collapse of the Capitalist system while setting up the infrastructure for Communism.

It could be said, then, that in such works as 'Das Kapital', Marx, the philosopher whose big idea was that we live in a world of our own creation and could just as easily build a different reality, published an escape plan to get us out of the Capitalist system.

Now, imagine if prisoners had published a book called 'How to Escape from Colditz', which details all the flaws and weak points in the prison that would-be escapees could exploit and win back their freedom. Furthermore, imagine that such a book became widely published. In that case, not only could prisoners learn how it might be possible to escape, but those holding them captive could also learn about those possible escape routes and do something about it, such that those weak points are no longer there to be exploited, and escape from Colditz is not possible.

It could be argued that something like this analogy happened with Capitalism, which would explain the direction it took, particularly after the 'Space Race' was won.

Now, if there was one thing that was fundamental to Marx's vision of a revolution that brought about an end to Capitalism, it was the belief that only human labour can create value. Therefore, whenever you add a new tool, instrument or machine to augment human labour, such tools, instruments and machines do not, in and of themselves, create value. Instead, they have value from human labour crystallised in them, and that value is transferred to the commodity being made, until the tool etc is completely worn out and no more value can be extracted from it.

Can Robots Preserve Capitalism?

It is certainly true that, if a business leads the way in further mechanising production, they get to reduce labour costs and so gain a profit advantage over rival businesses. But this is only a short-term advantage, because once rivals adopt that further mechanisation too, the average socially-necessary labour time goes down, meaning that, overall, the rate of profit

goes down as automaton ramps up, because you are reducing the only source of value creation, which is human labour power.

Being a 19th-century philosopher, Marx was writing long before the term 'Artificial General Intelligence' entered the lexicon. While a combine harvester or a weaving loom cannot create value, one has to wonder why it should be that a robot with full general intelligence, meaning it is as capable as solving problems, adapting to changing circumstances, and of doing creativity as well as any human, could not be said to create value if it replaced human labour. If such machines can exist, then Marx's assumption is wrong. If we can realise the full potential of AGI, then we could have a fully automated economy without killing profit.

But, such an outcome would only be realised if everyone involved in Capitalism- workers, managers, executives and owners- were all 'Pure Capitalists'. It is obvious, though, that very few are 'Pure Capitalists'. After all, what would a 'Pure Capitalist' insist upon? Such a person would insist that as much revenue being generated by business practices is re-invested back into that business so as to keep on increasing its profitability as much as possible. Therefore, all such 'Pure Capitalists' would only accept the minimum possible wage/salary. Nobody would pay themselves six-figure sums; nobody would waste investable funds on conspicuous luxury, and everybody would be eager to make their own position in the business obsolete as soon as technological advance enabled that.

But, as we are all only too aware, it is particularly true of upper managers and executives that, while they are keen to impose a minimum wage and technological unemployment on the blue-collar workforce, they are not at all keen to accept a minimum wage/salary, a frugal lifestyle, or technological obsolescence for themselves. No, they expect to extract riches from the system, to parasitise off it rather than serve it in the 'pure capitalist' sense.

If either of these suggestions are correct, then I would argue that we have identified the reason why technological and social development has not been allowed to go in a 'Star Trek'-style utopia.

Such a statement may seem odd, given what we have seen on the news in recent years. After all, aren't tech entrepreneurs building rockets and talking about colonising Mars? And haven't we all heard of those new generations of AI that are rapidly closing the gap between what humans can do and what machines can do? Therefore, surely we are heading in the direction of a 'Star Trek' style utopia?

Thing is, though, if you look more closely at where technological advances have really been focused, you end up with a much more dystopian picture.

The Real Justification of Low Taxes

Take taxation for one thing. The Neoliberals would have us believe that the lower taxes are, the higher productivity and innovation will be. After all, lower taxes means more money in the hands of the private sector, the only sector in which entrepreneurialism exists. Certainly, the last thing we should do is give away more money than is absolutely necessary to the State, whose bureaucrats know nothing about entrepreneurialism and just get in the way of progress.

But, actually, it is higher taxation that promotes the positive kind of research and development, as can be seen by considering the motives of companies like Bell Labs during the 50s and 60s. Back then, profits were highly taxed and so, if those profits were simply pocketed the Taxman would simply take a large chunk of it away.

That eventuality just didn't seem as attractive as alternative uses such money could be put to. Such as? Well, such as using that money to pay higher wages to employees, an option which appealed to businesses based on a paternalistic mindset looking to inspire loyalty in a workforce that might otherwise seek a Marxist revolution.

Another option that seemed more appealing than money being appropriated by the Taxman, was investing in research and development. Again, the mindset of such companies played a part too. Up until the 80s, businesses like Bell Labs saw the primary purpose of corporations as the duty to make things, rather than simply to 'make money'. Higher taxes therefore incentivised companies to invest more money in R+D that could lead to overall improvements for society.

But then, following the lowering of taxes and the financial reforms of the 80s onwards, we did see innovation of a kind, but it was innovation in Financialisation not productivity. The days when revenue was used to hire more useful workers, raise wage levels and increase the size of research budgets was over, and we instead entered the era of mergers and acquisitions, stock buybacks, and 'Greenmailing' (this refers to the tactic of simply threatening to launch a hostile takeover, in the expectation that the targeted business's current executives will pay out enormous sums of money to make the raiders go away). 'Innovations' such as these proved to be very useful for boosting the value of executives' portfolios and dumping large amounts of debt onto the rest of society. But they did no good at all for promoting the kind of R+D that could lead to a Star Trek future.

And then there was the research and development into Robotics. One would have thought that, if the main purpose of Capitalism was to automate and mechanise as much labour as possible, then this would be the one branch of sci-tech that would receive the greatest focus. Reality, though, turned out to be quite different. What actually happened is that many industrial-line workers went on strike, not for better pay necessarily, but rather to replace current forms of drudge assembly work with mechanisation. Meanwhile the owners and executives of those factories chose not to invest much at all in robotics, but rather to close down those factories and open up more labour-intensive, low-tech facilities in the global south.

The Effect Oil Had On Union Power

Of course, increased mechanisation could have a detrimental effect on worker welfare too. Throughout the 19th century and early 20th century, the dominant energy source had been coal. Both the need to mine the coal and to have factories powered by it required gathering large amounts of people into localised spaces, and so we ended up with whole towns built around the extraction and burning of coal. With so many workers concentrated into one area, and the supply of the energy source powering the wealth of the country so obviously dependent on their labour, when these workers unionised they were able to exert

considerable pressure that forced their bosses to implement improved safety and better rates of pay.

But, with entire towns built around the extraction of coal, and whole communities built around that industry, generations of families built their lives around coal, and in doing so they put down very deep roots. This made it almost impossible for them to move on once coal's dominance as the main fuel source came to an end.

So, once machines came along that replaced human labour, it was like the coal left those towns, hauled away by trains, and the people were left behind without jobs, in environments that turned from thriving communities into decaying rust belts whose inhabitants scraped by on whatever state handouts they could get.

But the greater change to affect collectivised power happened in the 20th century, when coal's dominance was usurped by another fossil fuel- oil. As Western oil drilling companies set up their refineries in places like Saudi Arabia, once more managed communities sprang up around the practice of extracting and burning a fossil fuel.

These managed communities, though, were different from the coal towns. Whereas they had been towns built and managed by paternalistic owners so as to provide a decent place for their workers, the managed communities built in places like the Middle East were not for the workers, but rather the managers. They got to live out a dreamlike existence in towns that sprang up in the middle of the desert, some of which would grow into cities that were playgrounds for the super-rich.

As for the workers drilling for that oil, the executives and managers putting such people to work had no cause to be concerned about collective action for two good reasons. Firstly, much of the oil was being drilled in countries run by authoritarian governments who ruthlessly stamped down on anything like unionisation. Secondly (and, perhaps, more importantly) whereas the extraction of coal had required large numbers of people to be concentrated in certain areas, and their strength of numbers plus the undeniable value of their labour in extracting the coal, all worked in favour of unionisation and worker-focused politics, drilling for and refining oil created an industry that was more like a scattered, diffuse network. In other words, unlike coal oil just didn't lend itself to supporting unionisation, because there was never enough workers coming together to create that critical mass, out of which came collective action.

There was a further reason why oil pretty much undid the collective power that had developed out of the coal industry. A century before, the coal industry had brought millions of people into the cities, and all that labour power had helped make the men who owned the mines and factories incredibly rich. With that concentrated wealth came the seeming ability to control everything, including the political system.

But, in concentrating so many vital workers in certain places, the Capitalists were inadvertently creating a challenge to their power, in the form of mass democracy. As the workers formed unions and other forms of collective power, the role that governments played changed too. It was no longer the case that those charged with creating and enforcing the law of the land looked after the interests of the rich and powerful at the expense of the

masses, at least not necessarily so. Instead, the working classes could vote for left-wing governments that represented the masses against the Powerful, and Capitalism was forced to raise living standards in general and to concede to things like paid vacations, weekends, and pension funds.

Oil, though, undermined the idea of mass democracy. Even more than coal, the world (and particularly 1st-world nations) became addicted to oil as it was the lifeblood of the global economy. That put enormous power into the hands of those in charge of supplying thirsty industries with the fuel they needed.

But, whereas with coal that power was really in the hands of the miners who dug it up, and they could bring everything to a halt by going on strike, with oil it was the rich owners who controlled the taps that could halt everything whenever they wanted to remind the world who was really boss, as the OPEC oil crisis proved.

Since it was obviously where vast wealth was to be found, money poured into the Arab world, until the oil-rich, despotic countries had more foreign currency than Japan, Germany and the USA combined. Indeed, so much money was pouring into the Arab countries, the authoritarian governments like Saudi Arabia didn't know what to do with it all, and so they turned to Western banks for help.

The western banks and financiers knew what to do. They saw that the money based around extracting and supplying oil could be used to create a new kind of currency- the 'Petro Dollar'- that could be traded and used for speculative purposes that freed this currency from governmental control.

As the nation's politicians from all around the world came to the new headquarters of western banks to take part in elaborate signing ceremonies, the many billions of petro dollars they borrowed helped turn the global financial system into a giant force. Not only did most ordinary people feel like it was a force that held their destiny in its hands as they watched speculators muck around with the cost of the energy they were so dependent on, but the politicians also increasingly felt they had no control, either, and that 'Market Forces' should be in charge. But, not in any true laissez faire way that separated the State and the Market, but rather in a way that let money take charge of politics, as it had done before collective power had led to mass democracy.

In other words, oil became one more reason why a certain uneasy and pessimistic mood came to dominate Western society, namely the feeling of being surrounded by natural and man-made global systems that are so complex and unpredictable, neither we nor the governments that represent us can ever really control them.

Again, one can't help but think of the contrasting attitudes that had to do with the long-term effect automation pushed to its logical endpoint would have. On the one hand, the blue-collar workers were thinking, "yes, in the short- and medium-term improved automaton means fewer workers, which could therefore threaten my job; but the end result would be a fully-automated economy outputting such an abundance of products there will be no need for hierarchies based on disproportionate material access any longer". On the other hand, the owners/ executives were seeing the short- and medium-term increase of their own power

and influence, but the complete collapse of the scarcity-based hierarchy upon which it was founded, happening in the long-term. Since they could do something to delay or even prevent that eventuality, they took such action.

Warbots

There is another, more obvious reason why we saw a lack of robotic research that could have led to a Star Trek-style future. It was because some 95 percent of research funding into Robotics was channelled through the Pentagon. Are the armed forces much interested in devoting R+D to the creation of autonomous machines that can pick crops, stack shelves, and keep our streets and homes clean and tidy? Not nearly as keen as they are to R+D unmanned drones, tanks, and other weapons of war.

The military-industrial complex has other uses, besides preparing for and waging armed conflict. Recall how the United States has been able to make use of Soviet-style industrial planning, while hiding this fact from the populace by claiming this is all necessary for military preparedness. Most of the projects taken on by the Pentagon have been related, one way or another, to “security-related concerns”, meaning more weapons, and superior forms of surveillance and communications technologies.

The Dark Side of the Web

Talk of the latter immediately makes one think of the Internet. This would be one example of something that began as a State-funded military project that ended up as a civilian spinoff in the form of the Web we all use today. One can easily make a long list of the conveniences, entertainment and educational opportunities quick access to the world’s information has put at our fingertips, but we should also bear in mind that the Web could just as easily be cast in an altogether darker light, as just one more technology that is useful for those who seek to maintain and increase work discipline, surveillance and social control.

The technologies that put the world’s information within easy access, and the ability to communicate with anyone who can get online, also provided our bosses with the means to keep us under constant surveillance and to start invading those moments we used to have to ourselves. Now you can get a waterproof smartphone so you can amuse yourself on social media while showering, how fun is that? But, it also means you have no excuse not to answer that ‘urgent’ work email while in the shower, or queuing in the pouring rain, or while taking a bath.

Also, the same technologies that provide us with access to the world’s information can also provide our bosses with unprecedented discrete ways of gathering information about how we operate in a world where the distinction between ‘work life’ and ‘home life’ is increasingly blurry. Not only do you have no excuse not to be working or available for your superiors at a moment’s notice if it is possible to set up an office environment anywhere, but by installing various forms of ‘spyware’ that monitors such things as mouse-movements and key strokes, one’s superiors can monitor exactly who is working, when they are working, and how much they are getting done. Meanwhile the flexibility and portability of this sort of tech makes it so much more convenient to create ‘Flexible’ work regimes that underscore the feeling of

vulnerability that comes with being regarded as just one more commodity to be moved around as financial assets are bought, broken up, remerged and sold on again.

It's enough to drive anyone potty. If only there was a means to vent one's frustration. Of course, the Web does provide such platforms, but the way the Web evolved has made such problems far more like a method of social control than a means of facilitating revolutionary change.

A Dream of Connectivity

When companies like Google were founded, the young entrepreneurs working in their garage startups were inspired by grand visions that really fitted a 'Star Trek'-style future.

In order to understand that vision, we should go back to the 1950s. During that decade, there was a famous exhibition known as 'The Family of Man'. Central to this art exhibition was a mass of photographic images. Its designer was Herbert Bayer (1900-1985). He was a refugee who had fled from Nazi Germany, and his art installation represented a new kind of propaganda.

In the past, the Powerful had controlled the narrative, telling grand and dramatic stories that overwhelmed the people and kept them in a controllable state. But the whole point of Bayer's big collection of photographs of people in all their diversity was that there was no particular order to them. Instead, every individual was free to view the images in any order they pleased, and to form their own story around them.

To explain the concept, Bayer provided an illustration. At the centre of this image was a person with a giant eye for a head. This central figure is surrounded by a mass of images, images personally assembled into a subjective story. As Adam Curtis explained, "it was a utopian vision of the self, selecting and arranging the fragments of images into their own story, and so becoming strong enough to withstand tyranny. Confident individuals, in control of their own world".

Now, in the late 20th/early 21st century, Sergey Brin (b. 1973) and Larry Page (b. 1973) were ready to launch a web-based service that would take Bayer's basic concept, but expand it to an almost unimaginable scale. At the time of Google's founding, the hope was that unprecedented freedom to access the world's information would not confront the old systems of power; rather, it would enable people to bypass them. As was the case with the 'Family of Man' exhibition some fifty years previously, the idealistic vision behind Google was one of every individual gathering data in their own way, and using that information to make up their own stories. Such individuals would be free from the controlling narratives of old elites, but while they would remain individuals they would not stand alone. No, they would be linked together via common interests, forming communities on the Web.

How the Dream Fell Apart

But then, in the early 21st century, certain events happened that forced Google to corrupt the noble idea behind its founding. The first of these events was the bursting of the dot com bubble. Google was one of the Web-based businesses that survived, but now the venture

capitalists who had invested in the business and who believed in nothing but money, insisted that Google had better find a way to make money, and quickly.

It did not take the tech geniuses at Google long to figure out how that might be done. They knew that every time anyone was online, they were leaving behind trails. What they clicked on, what they ignored, how long they spent before scrolling, the keystrokes they inputted, it was all useful information. So far, Google had been using this information so as to make the service of giving people the information they wanted more efficient. Now, though, the idea was that if enough information could be gathered together, it would be possible to build up a picture of everyone's psychological profile. You could know almost everything there was to know about them, including their likely future behaviours.

What Google had, then, was a means of inferring what a person would click on and respond to, and all without them even necessarily knowing such information was being harvested. Google started to tell advertisers that their search engine now provided the means to add an unprecedented level of scientific certainty to the old challenge of getting into people's heads so as to sell them stuff.

And so, Google gave the world targeted advertising, a business model that quickly started generating millions of dollars.

There was, however, a slight problem. The business model's profit-making potential lay in the ability to gather an enormous amount of data on millions of people, and to do so without their being aware of it. But Google could not just sneak in and take all the personal data it felt like taking, because laws were about to be passed that would restrict their ability to behave in such ways.

But then the second of those events that would corrupt the idealistic beginnings of Google took place. This was 9/11. Following those infamous terrorist attacks, Security became the United States' primary concern, much more so than individual privacy. After the 'Patriot Act' was passed, Google's money-making idea- that of looking for patterns in a mass of data- became central to the security of the USA, and all the laws that would have restricted Google's ability to surreptitiously gather personal information, faded away.

Now, what all this did was to cause a shift away from the idea of Individualism that had defined the American psyche since the 1950s. And Google changed too. Because, whereas Brin and Page had founded the company on the idealistic dream of giving people data with which they would make up their own stories and become self-actualised individuals, now what Google was all about, was taking people's data, using it to predict what they would do in the future, and all without having to ask them anything. It did not matter what they, as individuals, thought or felt. Nor did the stories they might make up so as to bring some order to a chaotic world matter either. All that was irrelevant. Far from helping individuals become self-actualised, Google ended up sidelining human consciousness even more, and further commodified human life.

The Isolation of Cyberspace

To that end, online life saw the introduction of 'Agents'. These were software routines that monitored what you were doing and, in some cases, worked in the background, unnoticed, to encourage you to behave like the good, loyal consumer that Capitalism wanted you to be. One of the more effective ways of achieving such an aim was to populate the Web with 'agents' that worked on the principle, "if you liked that, you will love this". The effect this had was to further organise us into groups of likeminded people, until the Web was less like one big democratic space, and more like a constellation of more-or-less isolated communes where you hardly ever encountered any form of communication or info that opposed or challenged your prejudices.

As well as that, the age of Individualism also found that there was a form of security that people would take great comfort in, which was to be part of systems that reflected oneself back at you. That people found this very comforting was discovered by accident, when a computer scientist named Joseph Weizenbaum (1923-2008) created a software program called 'Eliza', in order to parody what were then attempts to program the rules of human intelligence. Eliza acted like a psychotherapist, responding to what people typed by turning those responses into questions, or by giving one-size-fits all responses. In short, it mimicked the conversations a psychologist might have with a patient, but it did not understand a word being said to it.

Weizenbaum figured that people would soon dismiss Eliza as a mere trick, but instead those who tried it would talk for hours on end, going into great depth about their feelings and other personal stuff. It wasn't that they thought Eliza was a real person that really understood them; it was more like they had been given a sort of psychological mirror in which they could see their inner selves, and bring it out into the open without fear of prejudice or judgement.

Thanks to Weizenbaum's discoveries, AI changed direction and instead focused on software routines that achieved that secure feeling of having oneself reflected back at you. Thanks to these developments, we ended up with a Web populated by 'agents' that gathered vast amounts of information about people's past behaviour, and then looked for patterns and correlations in order to predict how we would respond in the future. Thanks to the aims driving these AIs- not to know the meaning of anything, but just to look for patterns and correlations- the Web developed into a system that ordered the world in a way that was centred around you. This proved to be a comforting idea in this age of anxious and uncertain Individualism.

As well as that, psychologists who had been brought onboard to find ways of making online life the sort of existence that promoted consumerism, soon found that "angry people click more". In other words, it was found that high-impact, high-emotional content that kept you stimulated (not necessarily angry, though it was by no means disadvantageous to provoke such an emotion) also kept you buying more stuff. For those of us who wanted to vent the frustrations we were being provoked into feeling, we went online and voiced our anger and frustrations into the echo chamber that social media had become, heard only by those who already agreed with one's subjective view of the world, a collective too dispersed in real life to be able to do much of anything about what was considered wrong with the world. And thus, nothing changed.

A People Controlled, a Revolution Held In Check

What was developing, then, was a system that promised not to change the world, but rather to keep the world stable; a very conservative idea, and one that was embraced by both the Right and the Left of Politics (or, at least, that part of left-wing politics with a chance of getting into power). You had Finance, promising it had at last found the secret of controlling the unpredictability of the Market, and new kinds of psychoactive drugs and software agents promising to bring security and comfort to troubled human minds.

What all this did was to transform Politics. Change was out and stability was in, since the overriding aim of Politics now was to manage and maintain the systems we had. So Politics became just another means of managing the world as it is. As Adam Curtis explained, “the old idea of democratic politics, that it gave a voice to the weak against the powerful, was eroded”.

Now, in the mid 2020s, there is much hype surrounding the capabilities of new generations of artificial intelligence. While we are undeniably seeing some incredibly impressive advances in what AI can do these days, again not much of this advance has a lot to do with the future we were promised.

When those blue-collar workers picketed to increase automation in industry, they were (we can suppose) foreseeing a world in which robots would do all the dull, dirty and dangerous jobs, and that would free the human workforce to pursue nobler goals, such as creating music, making films, writing novels, and stuff like that. But what we got instead was AI that is incredibly good at producing art and literature (the ability to instantly generate a movie is not quite there, but rapid improvements are being made) whereas the robots that can do menial chores that require anything other than clockwork routine are lagging far, far behind.

So, far from robots scrubbing our toilets, picking our crops, etc, while we create art, we instead pretty much shut off the opportunity to earn a living from the Arts, and ensured non-routine menial labour would still be done by low-wage human workers. And those wages will only fall as we eliminate white-collar work and creative work with AI, while not doing nearly so much to improve the capabilities of robots in the real world.

People still dream of a world like the one we may suppose those striking factory workers wanted. I have seen people use generative AI to produce incredible images of futuristic cities (sometimes in space) where humanoid robots are everywhere, and people are happy and free of their labours at long last.

But, again, is this not just another form of control, of keeping us pacified while ensuring nothing really changes in any way that would actually bring about such a communist utopia? Is it not too far-fetched to suppose that the elites of Neoliberalism are thinking along the lines of “by all means, amuse yourself in cyberspace by generating pretty pictures and supposing that, somehow, such virtual dreams will turn into solid reality. While you are all playing around in your toy realities, our Neoliberal agenda is left almost entirely unopposed to shape the future in our interests”.

Neoliberalism: An Economic Failure, but a Political Triumph

Looked at in purely economic terms, the only reasonable conclusion to draw is that Neoliberalism has been a dismal failure. We now have decades of evidence to show us what results from destroying job security and increasing working hours. The result is not a more loyal and 'productive' workforce, but the exact opposite, as evidenced by the overall lower growth rates seen around the world from the 80s onwards. Meanwhile the 'Man With a Gun' that was created to serve the Neoliberal agenda- all those armies, police forces and private security services that are required to turn the human experience into a commodifiable form- are themselves also ultimately unproductive, since they serve not to increase wealth but rather to protect the ill-gotten gains of the Neoliberal elites while also increasing the debt burden the rest of humanity is left holding.

So, looked at in economic terms, Neoliberalism fails. But, actually, it was never really a primarily economic project, as can be seen in the way that, when it comes to a choice between economic imperatives or political ones, Neoliberalism has always favoured the latter. In other words, Neoliberalism has always preferred to focus on making Capitalism seem like it could be a viable economic system, over working to create a system that actually does have long-term viability.

This is achieved through depoliticising labour (something it has been tremendously successful at) and by severely limiting our ability to imagine a world that is different from the one that exists today.

The ironic thing about this situation is that, if we assume the Neoliberals consider themselves the heirs of the Californian Ideology, then their aim should have been to create a stable system based on natural feedback loops that would free us from all forms of political control.

As we have seen, though, there never really was an underlying natural order to this system, as the organising principle actually came from the cold, logical machine world. We now know, from failed attempts to model such a thing and from the financial crashes and massive expansion of the State that has always followed attempts to implement it in the real world, that there is no validity to the theory of market stability.

The systems theorist, Stafford Beer (1926-2002), once defined viable systems in the following way: "A Viable system needs no controls". If that is indeed a valid definition, then we have to conclude that the competitive, consumption-based for-profit market system is in no way a viable system, since it has proven time and time again to be unsustainable, absent of a great deal of regulatory oversight.

So, change is obviously called for. But, we have discovered another negative aspect to this system we have created. And that is that the machine organising principle underlying the ideology of our age has its uses, but it also has serious limitations.

As the documentary film-maker, Adam Curtis, explained, "what we are discovering is that if we see ourselves as components in a system, that it is very difficult to change the world. It is a very good way of organising things, even rebellions, but it offers no idea about what comes

next. And just like in the communes, it leaves us helpless in the face of those already in power in the world”.

In the case of the communes, the extreme individualism that was practiced left those of a less assertive, aggressive nature powerless against the bully. In the case of the Market, it comes in the form of those lacking money ending up helpless to do much about those who have money, particularly once Capitalism’s drive to commodify everything that can possibly be commodified, turns political favour from something that is influenced by mass democracy, into something influenced by the power of money. Then, you get a positive feedback loop, whereby the more money you have, the more you can lobby for reforms that kill off any attempts to bring us closer to economic populism, and the further we get from economic populism, the more wealth concentrates into the hands of those bending governments to their will through the ever-increasing power of their money. The end result of this positive feedback loop is that one percent of the human race control 99 percent of the world’s wealth, while the remaining 99 percent have to make do with the remaining 1 percent.

The Problem With Alternatives

It should be clear that such an extremely unequal world is in no way sustainable, and that’s before we factor in the immense environmental harm running the (anti)economy so hard it is putting hundreds of billions or even trillions of dollars into the hands of some people. A change is needed before it’s too late to stop a descent into total societal and environmental apocalypse but, as Adam Curtis pointed out, we have unfortunately built a system that works to prevent us from seeing any alternative but sticking with what we are doing.

Attempts have been tried, of course, but as was the case with the communes none have had any success in changing the zeitgeist of our age. In this series, I have focused pretty much exclusively on the failings of Capitalism and how that traces back to the mythstake of the popular story of where money and markets came from. I have not said much at all about Socialism, and many would conclude that, since I am obviously ‘against’ Capitalism, I must be ‘for’ Socialism, and therefore ignorant of the great harm that was done in its name.

That great harm was done in the name of Socialism shows that we should not run blindly ahead and put into practice Marx’s philosophical point that Capitalism only exists because we wake up every day and recreate it, and could just as easily create a different system tomorrow. The problem is, change is not always for the best, and can quite easily make things a good deal worse.

‘Jokers’, ‘Middles’ and ‘Dreamers’

In the case of the Marxist revolution, this possibility of things going wrong made all-too probable, thanks to the incentives and ignorance of those attracted to Marx’s philosophical position. I would argue that there are three kinds of people who, for one reason or another, are attracted to at least some aspects of Marxism, and I call those types ‘Jokers’, ‘Middles’ and ‘Dreamers’.

The ‘Jokers’ are named after a quote from ‘The Dark Knight’: “Some people are not after anything logical, like money...some people just want to watch the world burn”. In other

words, it refers to anarchistic nihilists who just hate the current system and only want to riot and cause as much damage as they can, and have no interest really in building anything out of the ruins their vented frustrations have caused.

The 'Middles' are named after a quote from George Orwell's 'Nineteen-eighty-four': "The Middle want to swap places with the High". In other words, this group comprises power-hungry types who see nothing wrong with extreme inequality and hierarchies per se, but would rather their own minority group ran the show, rather than the current dominant minority.

Obviously, the first two kinds of 'Revolutionaries' are not much help when it comes to the creation of a viable alternative system. As for the Dreamers, the problem here is that, absent of a clear, detailed and workable plan of what this alternative system is and how it will function, it becomes all too likely that attempts to build it will fall foul of that paralysis of thought and action that tends to result when we are confronted by the complexity of the possibilities open to us when we are obliged to see reality through a hitherto unknown perspective. And that's assuming that the current, dominant system will just passively allow free experimentation in alternatives. It should be obvious by now, though, that the current system would not passively wait to be rendered obsolete but will fight the establishment of a genuine alternative using every dirty tactic at its disposal. Clearly, Socialism is not sufficient to guide us past the potential pitfalls that come with replacing Capitalism with a viable alternative. As to what that alternative is, nobody really knows.

We began this series with an anecdote about spelunkers who discovered fantastic cave paintings, and this led us to wonder what stories such people might have been telling, using this particular art form. You may recall that the novelist and social philosopher, Elias Canetti, suggested that, in depicting great herds of animals, those artists were challenging people to imagine what it might be like if human beings were ever to gather in such stupendous numbers. In other words, this was our distant ancestors' way of imagining cities, metropolises and nation states, made up of people in their millions, and tens of millions.

What would those ancestors make of our contemporary civilisation? If the latest scientific, archeological and anthropological evidence and research is any guide, I would say they would regard our civilisation as a paradox, because we are stupendously powerful in terms of technological capabilities, but at the same time we are socially retarded.

Let's talk about why those ancestors would be astounded and bedazzled by our technological capabilities first. Obviously this would be the case, for we can achieve things with our tech that would seem like magic to ancient people. With recordings of music from people like Elvis Presley (1935-1977), and of speeches from the likes of Martin Luther King, we can make the dead speak again. With our electric lights we can banish the dark in an instant. We can fly to the far corners of the world in less time than it took our ancestors to travel fifty miles. On and on the list of astounding abilities goes. Once it was understood what we could do with all the tech at our disposal, our ancient ancestors might well believe we had acquired the power of gods.

But, if they were to ask what kinds of societies we had been able to build with our godlike powers, they would be dumbstruck and hugely disappointed to learn that, despite our stupendous technical abilities, we are stuck in a very narrow Left/Right political spectrum.

“How can it be”, they would say, “that you have such power to reshape the world and do magical things, and yet you believe the only choice you have, in terms of what society you can have, comes down to a binary choice between Capitalism, which is shown to be non-viable, or Socialism, also shown to be non-viable? You think it has to be one, or the other, or some awkward combination of these two non-viable approaches! How could you people be so socially retarded as to believe those are the only options that could ever exist? What on Earth happened to human imagination?”.

Actually, the problem with Socialism has nothing to do with its viability, but rather the fact that it cannot be defined as a system, unlike Capitalism. The fact that Capitalism has proven to be a dysfunctional system that goes out of control unless regulated and supervised does not alter the fact that its core features can be considered the components of a single, identifiable system.

The only thing that can truly replace a system is an alternative viable system. Socialism does not qualify as such, because it is more of a loose collection of anti-individualistic, anti-profit, anti-commodification ideas and feelings. Indeed, declaring oneself to be ‘Socialist’ is not saying much beyond “my position is ‘not Capitalism’”. Holding an anti-current system position does have its uses. In particular, it can be a powerful and somewhat effective regulatory counter slowing down a dysfunctional system’s trajectory toward disaster. There can be no doubt that, were it not for the countering forces of Left-wing sentiment, the world would have spun off into social collapse and environmental ruin by now. But when it comes to fully replacing that system, just opposing what we have is nowhere near sufficient for building a viable alternative.

A Hint at Hope

But, anyway, let’s return to those imaginary ancestors. We can safely say that our ancestors would reach this grim appraisal of us, because of what the latest archeological and anthropological research is revealing. And that is that the way we have imagined our past, and the journey we imagine we took to end up where we are, was a far more complex, wonderful, scary and varied evolutionary development than the simplistic and sanitised story that follows from the Mythstake of barter.

You can still find accounts that say money and markets have their roots in barter, even though there is hardly any evidence to support this story, and a great deal of evidence to show this cannot be how money and markets actually evolved. It is also a popular belief that hunter-gatherers could only form small groups, such as ‘bands’ or ‘tribes’. This is another belief now totally refuted by some amazing archeological discoveries.

The idea that hunter-gathering gave way to farming in an ‘Agricultural Revolution’ is another belief that is seriously challenged by the latest evidence, as is the belief that any gathering of people beyond the size of a village must have a permanent hierarchy with a Chieftain, a Monarch, a President or an Emperor to lead it, if it is to hold together.

All these assumptions are wrong. Our ancient ancestors were far more imaginative than we are when it comes to social experimentation, and in our simplistic and sanitised version of the past there are huge gaps which, in our arrogance, we just brush aside, assuming “nothing of note happened during this period” when, in fact (as the latest findings are slowly uncovering) some incredible forms of experimentation were happening.

It would, of course, be outside the scope of this book to talk in detail about the findings just mentioned. Let us just end by acknowledging that the Mythstake of barter has had a seriously detrimental effect in that it has led us to a state of social retardation. But, as we are discovering as we uncover our past and don't look at it through the blinkered perspective of a Mythstake, human imagination is not nearly as constrained in terms of social possibilities, as we have been led to believe.

But the Barter Mythstake is not the only false narrative we have concerning where money came from or how markets evolved. The next books in this series will take us through these other Mythstaken accounts. As well as that, we shall also start to connect the Mythstakes in Economics to Mythstakes in Cosmology, and also start the search for the truth in accounts of life, the universe and everything that are almost entirely ignored.

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