

FRANK  
SCHIRRMACHER

# EGO



THE GAME  
OF LIFE

**EGO**

Maybe the target nowadays is not to discover what we are but to  
refuse what we are.

Michel Foucault

**E G O**  
**THE GAME OF LIFE**

**FRANK SCHIRRMACHER**  
**TRANSLATED BY NICK SOMERS**

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## PREFACE

We have become incredibly uncomplicated, but unfortunately we ourselves don't notice it. Why do we do what we do? Why do we love what we love? These questions are so complex that we are usually incapable of answering them ourselves. Nor do we realize that other people have long answered them for us.

Forget for a moment what you know about psychology, brain research or even from your own experience about the puzzle of our existence. Unnoticed by us, economists have made the workings of the mind of the modern individual their affair.

To simplify a hyper-complex world and speed up business transactions, a model has been developed behind the scenes that is changing our lives.

According to this model, life can be made much simpler and more profitable if we assume that people are interested only in themselves and their own personal advantage. This book looks at how this originally harmless model has become a trap, and how well this trap is disguised.

All trappers camouflage their traps. In the forest they can do so with leaves and with metal clamps hidden in the earth: artefacts that are made to appear part of their natural surroundings. Among humans the



traps are camouflaged as natural laws – hence the statement: ‘People are selfish’, genetically and morally. Supported by modern calculating machines, an economic model has turned this thesis into a natural law. And we are beginning to feel it.

Many people in today’s world think that they have more liberties and freedom of choice than ever, and that they can ultimately accept or reject theories as they wish.

In reality they have not only unknowingly accepted them; they have long been living and working with them.

We are experiencing a new era of information capitalism. It has started to transform the world into a state of mind. It performs and plans great things. It seeks to read, control and sell thoughts; to predict, price and eliminate risks. Its brain is occupied relentlessly with finding out what people do, say, buy and what new moves they are planning. Wherever they encounter it, they are confronted by a system that always knows better. It deprives them of the right to conceive their surroundings differently from what they are. It claims that whatever they do is for their own advantage.

For information capitalism there is no such thing as irrational behaviour. In its eyes, friendship, loyalty and love all have rational reasons motivated by self-interest – hence the proliferation of ‘incentives’, rewards ranging from bonuses in Wall Street to virtual medals, awards and ‘likes’ conferred for the most private matters.

There are open games like chess, and hidden games like poker in which the players can’t see each other’s cards. The information economy is like a round of poker. Its world is one in which people don’t really say and do what they think, but everyone becomes transparent when it is assumed that they are acting egotistically. Hence this huge demand for information, this compulsion to dissimulate, to bluff and to leave false clues. Finance algorithms disguise share transactions to confuse lurking predatory algorithms, or else predatory algorithms feed other economic agents at the speed of light with false information to force up prices. People adopt false identities, create Facebook profiles for their personnel head or bank. Entire states send out false signals so as to confuse markets. It is a society in which people mistrust not only one another but also themselves. It has reached the stage where people

accept that their education, experience and career do not mean what they thought they did.

The prospect of obtaining answers to questions that have not yet even been asked, the claim to know more about people than they do themselves, the predictions of what people want before they know it themselves, the offer to be a 'friend', are identical in structure to secret service surveillance algorithms that recognize crimes that the perpetrators themselves are perhaps not yet even aware of. The new economy uses machines and defines human relationships with the aid of mathematics. It loves the 'prisoner's dilemma', a canonical example from game theory in which two people share the same fate but cannot communicate with one another and are offered the opportunity to gain an advantage at the expense of the other. Betrayal is not only foreseen but 'the rationally sanctioned norm'.<sup>1</sup>

It would appear that people who come into contact with this idea change their behaviour. A view of the world which believes that behind every human action is the inevitable logic of self-interest is predestined to produce endless egoism.<sup>2</sup> These days, everyone comes into contact with this world view. In an environment in which information, not only in stock exchanges but also at work, in communication and even in friendships, is organized by logical computing machines calculating according to the laws of personal profit-maximization, social values change at an astonishing speed.

Information capitalism questions people's lives and identities, harnesses the real economy for its purposes and is now in the process of rewriting constitutional and international law.

It is not only individuals who are losing their sovereignty. The sovereign rights of European states and parliaments amputated by the current euro crisis are not examples of professional malpractice but part of the operative logic of information capitalism.

It has undermined human thought with a labyrinth of tunnels and shafts and it processes the raw material it extracts on machines that – depending on the desk they sit on – can wage wars, incite revolutions, create money, control people or send the latest holiday photos. It appears to be in a position to cut off entire nations overnight or under certain circumstances to give an individual who connects into it the power of a state.

People are beginning to go underground with it in closed rooms with artificial light and to take the tunnels dug by it for their own thoughts.

A hidden trap must deceive all of the senses. In his *Encyclopédie*, Diderot recommends disguising the smell of iron, because experienced animals associate it with their destruction. A modern standard work on trapping animals describes in all innocence how this is done: 'Entice the animal into the machine, be it with a bait or through its natural curiosity.' According to Otto Mayr, it is no coincidence that for a long time the English words 'engine' and 'machine' had negative connotations of deviousness, trickery, conspiracy and even intrigue.<sup>3</sup> The information capitalism machine is the computer, but the device itself is innocent. It depends solely on who has it in their hands and for what purpose they use it. Once human self-interest is reduced to a formula, it can be used to calculate the behaviour of an entire society.

It was Diderot who described 'trapping' – not the trap – as a 'science'. The challenge is to capture creatures whom experience has made suspicious. They can be caught only by collecting and falsifying information. The trap must present the bait as easy prey. The bear, fox or wolf must be led to believe that it can gain an unexpected benefit. To do this, it is necessary 'to study with great care the places to where the animals withdraw during the day, the places they spend the nights, and the paths they usually follow'.

The trap is also useless without the trapper's strategy. The most successful trappers are those who think like the creature they are trapping; the most successful avoiders of traps are those who think like the trappers who wish to catch them. That is the 'science'; it is pure mathematics and can be programmed by computers: during the Cold War, when it was invented, it was called 'rational choice theory' and given the harmless-sounding name 'game theory'.

Driven psychologically by the fear that totalitarian systems like the Soviet Union disempowered people by claiming to know what was best for them, economists devised an alternative system in which individuals did only what was best for themselves. It became one of the most important strategic weapons in the Cold War, and through it the West scored a resounding victory in the superpower game.

As it turned out, however, that wasn't the end but only the beginning.

The superpower game was over, and the game could now be turned to individual societies. One of the architects of the great trap later admitted that the rules by which the new Game of Life is played need some getting used to. In order to win, you have to accept the idea that ‘the universe has singled you out to be its personal enemy’.<sup>4</sup>

A word in conclusion about the aim of this book. It was inspired by the crisis, not by its social but rather by its economic manifestations. The crisis is just a symptom. It shows the instability not only of markets but also of societies which, like markets and people, are organized like *homo oeconomicus* – in my eyes the first case of a system failure of the information economy.

The crisis we are dealing with today is not just about money, profit, the Lehman Brothers bankruptcy or the crisis in Europe. This, if you will, is just the simple side of the question, which is most easily susceptible to analysis. Who knows, perhaps it will be resolved, and people will go about their daily business again.

The information economy evaluates feelings, trust and social contacts as well as shares or goods, and for the first time in history it has the technical wherewithal to do it with increasing degrees of perfection. It is one thing to take for granted in a business transaction or auction that your counterparts will quite naturally look out for themselves and possibly pull a fast one on you. It is something else for social life itself to become increasingly like a business transaction or auction, a world of self-promotion according to completely transparent economic rules. In this world, mistrust, insinuation, bluff, diversionary tactics, have become the norm, be it only, as is often stated, ‘to reassure the market’. But they apply not only to states but to an even greater extent to individuals.

These rules are all written down somewhere. They are assumptions, auxiliary structures, models, attributing not mental but mathematical characteristics. One book starts with the quote ‘Populating economic models with “flesh-and-blood human beings” was never the objective of economists’, and then goes on to prove precisely the opposite.<sup>5</sup> The models themselves have come alive. They are no longer mere instructions to be followed implicitly like a navigation device. They do much more: it is the models themselves that make individuals into the persons

they describe. And they describe them, for all their self-imposed reservations, as egoists.

This book is based on a single thesis. It has been raised again recently by a few renegade economists, who call it 'economic imperialism'. They mean by this that the theoretical models in economics hold sway over practically all other social sciences. (The most imperialistic economic theory was obviously Marxism.)

In our world we experience this imperialism as the economization of everything and everyone. It is no coincidence that bestsellers like *Freakonomics* (or the nudge theories of behavioural economists) are so successful. At their core, these books describe an everyday world that breaks down everything into self-interest anecdotes ('Do you penalise parents for late pick-up from childcare and, if so, what is the response? Parents are even more negligent for low penalties, both because it is worth paying the cost and the low penalty falsely signals how little the moral cost is for transgressing norms').<sup>6</sup> However entertaining they are and however controversial the theories, their success shows that they are self-defence theories in a world which, translated entirely into economics, sees self-interest as the innermost core of rational behaviour.

But there is a high price to pay for this self-defence: many of the amusing suggestions, as Gerd Gigerenzer and Nathan Berg have shown in an eminent study of behaviour economics, conceal a neoclassical – or even a neoliberal – ideology.<sup>7</sup> This applies not only to behaviour economics but also to all automated markets, from financial markets to the new social communication markets.

Economic imperialism forces us – even more so since the financial crisis – not to leave the field to a dominant school of Anglo-Saxon economists in particular. A whole world has seen that some of the models postulated as the truth in recent years have weaknesses. If this book looks at two of the most effective structural theories in information economics, namely rational choice theory and game theory, it does not mean that they are the only ones.<sup>8</sup> They are, however, of outstanding importance to the story that this book relates: how individuals can have the feeling that the entire universe is in a conspiracy against them and how, after the end of the Cold War, a new cold war is opening up in the heart of societies.

## **PART I**

# **OPTIMIZATION OF THE GAME**



# 1

## TRANCE

THE MILITARY SEEKS AN ANSWER TO THE QUESTION  
OF HOW ONE ACTS EGOTISTICALLY

It starts, like a story from *The Twilight Zone*, with a trance. We are in the first years of the Cold War. Somewhere in America, protected by metre-thick bombproof concrete and steel walls, sit highly trained people. They are members of the United States aerial surveillance units. They are gazing at radar screens.

The soldiers are looking for small blinking dots that appear occasionally on the screen. They register even the slightest movement; every signal could be a Russian aeroplane loaded with an atomic bomb. They have been told repeatedly that no job in the entire American armed forces is more vital.

Then inexplicable things happen. An air force officer, who has survived the Second World War without a scratch, manages to break his leg on the short journey from his screen to the coffee machine. Others nod off for a moment. Some are away answering queries. Then there is the artificial light, the underground doors and passages, the growing bunker mentality, and always the green circles of the radar screen: all this reinforces the sense of being inside a 'hypnotic organism'.

'It's difficult to stay awake,' admits a crew member, 'when you're sitting in a dark room staring at a radar screen day after day, week after week, always looking for a signal that needs a decision.' And that's fatal,



because ‘a minute asleep could mean a city destroyed’, as a concerned visitor to the bunker wrote in 1955.<sup>1</sup>

A team of scientists – economists, psychologists and sociologists – alerted by the military tried to track the absences in the green-lit faces. And they finally realized that it was the computers, these vigilant machines, that were hypnotizing the men operating them.

This presented the researchers with an almost insoluble task: how to train soldiers to resist the hypnotic power of their own tools.

Every thirty seconds the men in the white coats scanned the soldiers’ faces with cameras controlled by punched cards. Every twenty minutes they photographed their screens, drew diagrams on their writing pads, in which they made notes every hour on the crew’s movements and the spatial distances between them – exactly the stuff of many a Hollywood science fiction or horror movie.

The scientists called these ‘psychodrama sessions’. The aim, however, was to describe the soldiers’ minds in mathematical terms. Not only were men operating machines, but machines were learning how to operate men.<sup>2</sup> To do this, people had to learn how to become machine-readable. And in this way science fiction became reality, because for the first time machines recorded not only movements or time management but also human ‘values’ and feelings.<sup>3</sup>

It turned out that many soldiers regarded the radar screens as outsize telescopes or as a ‘window’ into the world. This looked like a place to start. They had to be taught that what they were seeing on the screen was a game in which the other player, the Soviet Union, would do anything to trick them. It was a question not just of registering a signal but of predicting at any given moment the next movements of the blinking dot, which could be the Soviet adversary.

Since the Russians had the atomic bomb and a single aeroplane had the destructive power of entire squadrons of aircraft, the need for completely new strategic thinking had become vital. In the paranoid atmosphere of the time (when people didn’t know what we now know in retrospect), when a surprise attack by the Soviet Union was an ever-present threat, the human relationship to information had to be reduced to a simple code: expect the worst. You don’t know, the crews were drilled, what the opponent plans, but you do know that its only aim is to trick you.

The mesmerizing green lights on the monitor didn't display the 'truth' or the world as it was. They showed, as a contemporary report described it, a 'poker face'.<sup>4</sup> The soldier at the radar had to imagine himself and the screen as two poker players. It was a cut-throat game, as poker is often described. By seeing himself as a player in a poker game, the soldier was kept awake, stimulated, with his strategic intelligence honed.

The blinking dot could be a harmless commercial aircraft or a Russian aeroplane with a nuclear payload. The man at the machine had to understand that 'poker face' meant not spatial movements but strategic moves and could just as well be a bluff as the real thing.

So as not to fall into the trap, there was only one reliable assumption, one that worked well in economics, as the economists involved knew only too well: acting 'rationally' can only mean operating in one's own interests. For strategic intelligence this meant that if people acted in a certain way, it had to be assumed that they were hiding something in order to win the Game of Life.

Fifty years later, the anthropologist Caitlin Zaloom, who worked for two years as a stock exchange trader in order to describe the fully automated trading world, made exactly the same observation. The traders have to train their attention completely on numbers, which are no longer something fixed and stable but turn into continuously changing real-time signals.<sup>5</sup> Every transaction is a move in a game; all of the players think only of themselves; there are bluffs and surprise attacks, weapons of mass destruction and tactical, pinpoint weapons. The players are permanently screened, and decisions have to be made so quickly that they can only be done by computers.

Above all, however, it is the game theory models developed during the Cold War that are used by today's hedge funds. Entire investment bank departments use computers and game theory to decipher the intentions of rival traders at breath-taking speed from a huge volume of data so as to adapt their own behaviour accordingly.

This would have come as no surprise to those who designed the mind of the new human. It was probably even their intention. It was not psychologists who devised the new 'rational self-interest' behaviour and conceptual models for the military, but economists, physicists and mathematicians. The economists were familiar with markets in which

everyone sought their own advantage. Their strategies for an egotistical society were never limited solely to the military in the Cold War. The strategies were said to be universal and applicable wherever decisions were made – in poker, in business, at the stock exchange, in war.<sup>6</sup>

In 1950 the American sociologist David Riesman complained in his international bestseller *The Lonely Crowd* that in modern society individuals were becoming radar operators of their own life. No longer guided by their inner self but from outside, they could not help picking up signals from others and adapting their behaviour accordingly.<sup>7</sup> Now the criticism was reversed: everything becomes logical when one recognizes that the world is a poker game and everyone wants to win.

It sounded very convincing. When the first information about this new theory was leaked, a lot of hype developed around it. In a few years RAND Corporation, the organization to which the scientists who analysed the radar crews belonged, developed under the cloak of military secrecy into the most powerful think tank in the United States. It was not just about the Soviet Union anymore. It was about everything.

The birth of this idea has been described as ‘a key transition in American intellectual history’.<sup>8</sup> It is certainly one of the most underestimated. Only if we accept the premise that individuals always act out of self-interest can the entire complexity of human behaviour be translated into the language of mathematics. Formulae can be written, moves calculated, negotiations and compromises modelled and people trained to a new ‘rationality’, which they master automatically as if in a trance – an operation that is impossible if it is assumed that individuals have to be understood through their unique personal character.

A decisive factor in the worldwide breakthrough was the fact that these calculations could now be done at lightning speed and then also in real time. The first computers offered ingenious tools that were just waiting to be fed with the formulae for people. Calculating machines are bad at psychology but very good at computing profit maximization. Economists began to calculate the most complex decision situations with the aid of computers. With the financial support of the military, this was also tried out first of all on the Soviet Union.

Computers analysed the signals on radar screens and, as if in a military stock exchange, became better and better at predicting the Soviet opponent’s next moves. What is he doing? What is he planning? What

is he hiding? But the Russians were just as paranoid. Very soon it became 'What will he do if he knows that I know what he is planning?' The computers educated the people working with them. They demonstrated how people should be thinking in the modern world. They provided constant examples. They merged so much with human thinking that soon no military strategist believed that it was possible to think any other way.

'Learn to act rationally' meant learning to think and act on the assumption that everyone is acting out of self-interest. The operation worked even with behaviour that appeared altruistic. One can puzzle for a long time as to why someone might give a complete stranger 10 euros (or why the Russians would launch a disarmament initiative). Only when it is realized, so the theory says, that even in this case the person is seeking an advantage is it possible to understand it.

Soon, however, this theory was not being restricted solely to armament and war strategies. It was not only a tool. It developed into a stealthy, decades-long training in egoism. The computer showed how astonishingly far it was possible to go when all calculations were based on this motivation. It was an innocent machine. But through the information fed into it, it evolved, as has been aptly pointed out, from a training system into an 'indoctrination system'.<sup>9</sup>

No one suspected in the frosty 1950s that fifty years later, long after the disappearance of the Soviet Union, the idea of human behaviour born then would cause so much fear and terror in the world and would change social relations so fundamentally. What we are dealing with today is not the work of a few egotistical hedge fund managers or greedy investment bankers. They are just a symptom. In the cold years of the arms race – and not in the economic crises of the twenty-first century – a creature was let loose whose career did not really take off until the end of the Cold War.

## 2

### GAME

#### ECONOMISTS GIVE AN ANSWER

The formula that everyone operates egotistically and tries to outsmart the next person was devised during the Cold War. There was a rationale behind the idea. The formula worked because at the time there were two world powers opposing one another, both with the atomic bomb and both capable of completely annihilating the other.

Economics had a long tradition of the self-serving man, *homo oeconomicus*, a kind of virtual doppelgänger used to explain what makes people tick. He was now hauled out of the basement again, where he had been gathering dust. Previously, *homo oeconomicus* had led something of a remote and purely academic life. There were even formulae for him, some dating from the nineteenth century.

This is not the place to recount the two-hundred-year history of *homo oeconomicus*. It would be incorrect, however, to assume that he was simply let loose on the world from the outset as a profit-seeking monster – even if he infiltrated early modern English literature in particular in that guise.<sup>1</sup> As a being who was no longer to be explained by way of his diffuse passions but rather through his uncompromising interests (possibly including concepts such as freedom), *homo oeconomicus* was always an Enlightenment figure as well, and to a certain extent, as Habermas's student Axel Honneth has shown, he could even

be called a founding idea of the 'Left'.<sup>2</sup> He is a textbook figure, and clever economists point out ceaselessly that he should never be more than that: an assumption that enables us not only to better explain people and their preferences but also to design social contracts that have the advantage of not aiming for fine-sounding – although just as insubstantial – values such as beauty, truth and goodness.

And yet this is only one side of the story, and the good side at that. The bad side was summed up in a single sentence in 2008 by Lynn A. Stout, professor of law at Cornell University and an expert in corporate governance and finance market regulation familiar with the financial crises of the last few years: '*Homo oeconomicus* is a sociopath.'<sup>3</sup>

Countless authors, including many economists, have shown recently that the assumptions on which *homo oeconomicus* are based do not take sufficient account of the diversity of the human psyche and human society.<sup>4</sup> This book nevertheless claims that the person we are calling Number 2 here has been brought to life in the last few years and has become something that the responsible side of his creators never wanted.

The reasons for this are by no means of a purely 'economic' nature. They have to do with the fact that modern individuals no longer know exactly what their identity is, or whether they have one, many, or none at all. Contemporary philosophies are of no help to them but have rather confirmed the trend. As a result, there has automatically been less resistance to this simplified model, which until the middle of the last century lived to a certain extent as well from its contrast with the real person.

It was the first great victory of 'economic imperialism', which turned everything into economics; but it was a victory because the opposition dissolved. To that extent, economists cannot be blamed for occupying a space given up by others. Subjectivity or individuality was replaced by preferences (which come from outside and do not therefore need to be explained) and the desire for utility maximization.<sup>5</sup> Nothing else was needed anymore. As Michel Foucault put it, *homo oeconomicus* was not just an economic but also a political being and he had the advantage in the eyes of authority that he was 'eminently governable'.<sup>6</sup>

This on its own would not have been sufficient to bring Number 2 to life. Without the computer, without the electronic spark jumping

between machine and man, he would still have remained only a model; a theory with the advantage (unlike Marxism) that it was nothing else but that.

‘After the fall’ is the way the economist and philosopher John B. Davis, not without pathos, describes this expulsion from a non-committal Garden of Eden.<sup>7</sup> It took place in two stages: initially through the emergence of the first computers in the military and economic landscape of the 1950s, and then (with consequences greater than the invention of the steam engine) through the triumph of the ‘democratized’ computer in mass markets since the early 1980s. The fusion of science and scientists and indeed entire societies with their technologies, the creation of man-machine composites, whether they are called androids or cyborgs, will be a recurrent subject in this book. A revision of the image of the individual in the light of this fusion took place simultaneously in all disciplines, and ironically this revision often ended up with a model that economists had already categorized and conceived as *homo oeconomicus*. Cognitive sciences, for example, which began to play an important role in the post-war era, were no longer interested in the humanization of the machine but, as Jean-Pierre Dupuy formulated it, in the mechanization of the mind.<sup>8</sup> In the famous words of Martin Heidegger, cybernetics, the first science to merge with the computer, replaced philosophy.

Science not only uses technologies as tools to discover or change something. More than that, it discovers and systematically changes whatever the tools enable it to. The ability to calculate a person’s preferences – and soon those of an entire society, as appears likely as we approach the era of big data – is possible in real time only when there are tools available that allow this.<sup>9</sup>

Merely by using a calculator, anyone can intuitively grasp the notion that the brain is like a calculator and that mental processes are thus the calculations of a biological computer – an idea that in the 1950s was still not readily accepted.

This is all that Number 2 had ever claimed for himself. The rational individual is a calculating machine. He can be reduced to what he wants and chooses egotistically, his so-called preferences, and they can be calculated mathematically. The formalization of economics through

mathematical formulae after the Second World War (Davis calls it an ‘arms race’ among economists for prestige and influence) indeed makes it possible for individuals to be seen as nothing more than ‘mathematical objects’.<sup>10</sup>

Every economist would admit that assumptions about people are simplifications – so radical are these simplifications, in fact, that, as has been rightly pointed out, ‘the individual of mainstream economics is pared down to a point of nothingness, excepting the possession of automaton-like choice’.<sup>11</sup> But what if reality becomes precisely this automaton? What if the world turns increasingly into a great machine that operates in this very manner? The problem is not the simplified models. The problem is that we are witnessing a radical change, in which these models encode reality and become real themselves in this way. And not only that: they decide what is rational and what is not. If this is too abstract, just ask yourself what ‘preferences’ Google or Facebook decides for you, or – much more dramatically and topical – what stock exchange algorithms describe the trader’s preferences. The assumptions made by Number 2 – when reading an e-book, with ‘smart’ appliances, in finance markets, in political life – are already implanted. They are, as Michael Callon puts it, ‘performative’; they create the reality they model.<sup>12</sup>

This imperialist victory has antecedents directly connected with the Cold War.

It is self-evident that everyone wants to win rather than lose in markets, and it is trivial to say that no one should be reproached for wanting to do business. The new idea was that now only self-interested motivation counted and that an entire society was to be modelled in its image. The tacit agreement that people in reality are more diverse, richer, more contradictory and more moral than the theory claimed faded in the 1950s and was soon forgotten by some economists. It was now regarded as quite reasonable and in no way morally objectionable to act as the theory demanded.

In fact, for quite understandable reasons, morality did not play a major role at all. The explanation is obvious: during the Cold War it would have been fatally imprudent in this game to want to be anything other than a winner or to consider anything other than personal advantage. But if this was reasonable in a military setting, it was not limited



to that setting. The models were designed for dealing not only with the opponent but also with the relationship of individuals with the world.

Many of the economists working in the 1950s at RAND Corporation or advising the military belonged to the so-called 'neoclassical' school based at the University of Chicago, which for some time had been teaching in economics that people are egotistical and that markets are truth machines. Now they saw the opportunity to turn a mere assertion into a natural law.

They started writing formulae and algorithms, and the formulae in turn could be understood by computers. That alone was new. Previously – contrary to what is thought today – the social sciences frowned on the idea of casting human behaviour into mathematical moulds. But if it was assumed that people sought their own advantage, their behaviour could be described mathematically.

These often ingenious economists became experts not only in automating the military but also in automating markets and the people in these markets. They were pioneers in a world that was still half a century away from one in which every person would be linked to computers and markets. But all their formulae could be understood and processed by computers.

They invented something they called 'game theory'. And with the aid of this invention they introduced this cognitive model into our Game of Life. After the Cold War many of the economists with RAND Corporation won Nobel Prizes for economics. It was the culmination of a massive undertaking that transferred the logic of the Cold War to civil society. In the end, in the first decade of the twenty-first century, the ego model had indeed become a natural law. And no one can doubt that it functioned better than all the vague supra-individual value ideologies with their supposed mandatory ethical roles that give rise to the murderous collectivism (or racism) that had been allowed to evolve in the twentieth century. The entire global organism, wrote the senior leader writer of *The New Yorker* following 9/11, 'is based on a kind of basic faith – the unsentimental expectation that people, both individuals and society as a whole, act more or less through rational self-interest'.<sup>13</sup>

In the era of 'rational machines', however, we are beginning to realize that this rationality comes at a cost. And to date, with few exceptions,