



JIM BAGGOTT

A Beginner's Guide to Reality



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*To Mum,
in memory of Dad*

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Preface

Where are you right now?

Maybe you're standing in a bookstore, flicking idly through the pages of this book. Maybe you're sitting on a train, or in an airport lounge, killing time. Maybe you're sitting up in bed, reading this as a way of shutting out the mental clamour of your day prior to shutting down.

How do you know any of this is real?

We take the reality of our world very much for granted. And why not? Reality does have this habit of always being there when we wake up in the morning. It remains pretty consistently predictable through the day, and is still with us at night when we drift off to sleep.

This reality has a social dimension – we live and work alongside other people; we make money, we spend money (in bookstores, for example). We get married. We vote in elections.

This reality also has a physical dimension – we live in a world that contains physical objects, such as books, houses, cars, trains, mountains, rivers and trees. These objects give us sensations, of sight, taste, smell, hearing and touch. Underpinning all this is supposed to be a long list of tiny unobservable physical objects that scientists tell us make up the larger objects that we see and interact with. These tiny physical things are molecules, atoms, protons, neutrons, electrons, photons, and many more things besides, all dancing on the stage of three-dimensional space, to the tune of one-dimensional time.

This book is an exploration of reality from the social to the perceptual to the physical level. My aim is to lead you down through these levels in search of something we can point to, hang our hats on and say *this is real*. Organized into three parts, it asks three basic questions. Is money real? Are colours real? Are photons real?

Surprisingly, the answers aren't at all obvious, and many are quite disturbing. At each step the book examines some of the things that have been said about reality by a few of the world's greatest thinkers, from the philosophers of ancient Greece to modern scientists and social theorists, all kept firmly within the bounds of common comprehension.

This is basically a philosophy book. It starts with aspects of social theory and the philosophy of society, takes in classical, classical modern and contemporary philosophy, and ends with what I have always preferred to call natural philosophy, what others might call physics. If you have no background in social studies, or philosophy, or science, do not be alarmed, for you will not need it.

Philosophy is a perfectly natural human activity. We engage in philosophical speculation about the nature of our reality virtually every day. With a little effort, we can analyse and interpret these speculations in ways that help us first to recognize the nature of the problem that might exist with our common-sense conceptions of reality, and secondly to appreciate where some solutions might come from. Most importantly of all, if we can gain enough understanding of the problems and their possible solutions then we can form opinions of our own. So, this is a book for anyone who has ever wondered what is real, and how we know.

My thanks go to those with whom I have discussed both the idea of this book and its

content; specifically Peter Atkins, John Blackman, Marsha Filion, Les Naylor and Marga Veg
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misconceptions found herein are all my fault.

It goes without saying that this book would not have been possible without the love and
support of my family.

JEB, Reading, July 2000

Follow the White Rabbit

... Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and burning with curiosity, she ran across the field after it, and fortunately was just in time to see it pop down a large rabbit-hole under the hedge.

In another moment down went Alice after it, never once considering how in the world she was to get out again.

Lewis Carroll, *Alice in Wonderland*

All long journeys, as they say, start with the first step. Our starting point is provided by our common-sense view of what constitutes our everyday reality. Take a moment to stop and think. If you had to note down the key features of your reality, and describe them to a friend or a colleague, what would you say?

Think of green grass, a gentle stream, a blue sky and a bright yellow sun rising above a distant horizon. Think about a typical day in your life. Think of rising in the morning, going to work, striving to earn enough money to pay for the things that make life worth living: a nice home environment, a car, entertainment, a holiday.¹

You might be mildly troubled. Perhaps there is a sense in which you feel bound by unwritten laws, constrained by invisible conventions that are quite real to you but which, like liquid mercury, you can't quite put your finger on. Perhaps you feel that you have tended in the past to take reality at face value. Maybe you feel that this is a reality not of your making, and not of your design, in which you try to exercise what free will you can.

Perhaps the first thing we would want to admit is that reality should be independent of human beings. Reality should surely be independent of our ability to conceive it and form theories about it. The fact that humankind has developed to the point where we can construct elaborate theories about reality should have no bearing on the very existence of this reality. How could reality depend on having someone around clever enough to conceive of it? Did the reality that we know have to wait for some suitably qualified smart alec to come along? With a Ph.D.?

The sun rises, and you get out of bed. You make your way to work, a place full of people which obviously exists independently of your ability to go there. You work all day and return home. You watch the television news, which shows you images of events that have happened in different parts of the world, places that you believe to exist though you have never been there and will probably never go.² The sun sets, and you go to bed, confident in your belief that the sun will rise again tomorrow. It seems fairly obvious that people and objects continue to exist 'in reality' when you're not looking at them or thinking about them.

Secondly, we might agree that, whatever reality is, it does seem to be predictable, within recognized limits. Reality appears to be logically consistent. It is hard to conceive a world without rules, a world where anything goes, where things happen for no reason, where the sun might not rise tomorrow.

After several centuries of philosophy and science we have uncovered a large number of 'natural' laws, and we can understand and explain these laws using theories of varying

complexity. You will have heard of Newton's laws of motion, and of Einstein's laws of relativity. One of the principal concepts underpinning this consistency is that of *cause and effect*. The sun will rise tomorrow because the earth rotates on its axis as it moves around the sun. The earth rotates on its axis because... and so on and on.

It might also be reasonable to suppose that science has been so successful in the last few hundred years because scientific theories take us *progressively closer to the truth* about reality as it 'really is'. Scientific theories are imperfect in many ways, but can be thought to possess verisimilitude, a truth-likeness, which increases with each successive generation of scientific development. Perhaps scientific theories can never be the absolute truth but they can have varying levels of truth-likeness that, over time, progressively get closer to the absolute.

Scientists are constantly refining and improving their theories and, as it makes no sense to develop new theories that are less useful than their predecessors, we might be tempted to conclude that these theories develop closer and closer to the 'truth', however this is defined. So, we no longer believe that the sun and stars revolve around a stationary earth, as the ancient Greeks did, because we have found this to be not true. We believe it is more true to say that the earth goes around the sun, as this provides a better description of reality.

Finally, we have to work out what to do about the fact that reality is made up of things we can't see, such as molecules and atoms. But this really isn't so difficult. It is very hard to imagine how our world would work at all were it not for the unseen microstructures at the heart of all matter (including ourselves), and all light. Modern technology would be impossible if we did not first acknowledge the existence of these microstructures. We cannot be easily persuaded that just because we can't see them, they aren't real. No, these tiny bits of matter are there, all right. Unobservable objects really exist and do have real effects. These things feature in scientific theories because they explain aspects of our reality and are as real as trees, bananas or grains of sand.

Now look back over these common-sense conclusions regarding reality. Draw on experiences from your own life. Our starting point is that reality is independent of us, our ability to conceive it and form theories about it. Reality is filled with regularities derived from natural cause-and-effect relationships. Science takes us progressively closer to the truth about reality as it really is and unobservable objects such as molecules and atoms really do exist and have real effects even though we can't see them. Do you agree?

If you have not spent a lot of time poring over the prognostications of philosophers, the chances are that you find all this not only very reasonable, but also rather obvious. You are certainly not alone in this view. If you have already delved into the murky depths of philosophy texts or have read about some of the more bizarre conclusions of quantum physics, be patient. I'll get to you.

Before we can really get started, there are a couple of housekeeping items we need to look at. Roughly two-thirds of this book will deal with levels of reality that are deeply entwined with the workings of the human mind. Sometimes, it may appear that the book has wandered off into the world of mental processes and mental states and has lost sight of its subject. I won't try to make excuses for any unnecessary authorial meanderings, but reality and mind are very closely interconnected, and it will help to spend a little time here on the philosophy

of mind by way of preparation.

Theories of the mind come in two basic flavours. There is *dualism*, the theory that mind is very distinct from physical substances, such as water and stone, bodies and brains. There are also various forms of *materialism*, which hold that our mental states (such as thoughts, images or memories) are derived from the physical and chemical processes which occur in our brains. I will make no bones about the fact that I consider myself to be a materialist.

Dualist theories date back to the seventeenth century and are today considered by professional philosophers to be largely discredited (though there are some modern-day advocates). The problem with dualism is that it leaves us with a rather mysterious non-physical 'mind stuff', similar in many ways to the theological concept of the soul, or spirit. In this view, your mind is a 'ghost' in the physical machine that you call your body. The problem is that this ghost must somehow interact with the physical world if minds are to be responsible for making things happen.

If you're not sure why this might present a problem, try the following quick experiment. Place this book down on a table in front of you. Now, without touching it, pick it up using only your mind.

Having trouble?

Now if you pick up the book in your fingers, we can trace this physical act all the way back through your hand, muscles, nervous system and spinal cord to specific signals from a part of your brain called the motor cortex. All this activity takes place in the physical world, involving bits of matter and electrical signals. But now we need to explain how a thought, occurring in a non-physical mind, triggers the signals in a physical brain that lead to action, to bodily movement. This cannot be an interaction describable by any physics that we currently understand. Just how this happens – how the non-physical ghostly mind stuff causes things to happen in the physical world – remains very mysterious in dualist theories of the mind. This is why the philosopher Daniel Dennett has said that accepting dualism is giving up.

Recall the story of the 1990 film *Ghost*, starring Patrick Swayze, Demi Moore and Whoopi Goldberg. The story is briefly this: Sam Wheat (Swayze) is murdered during a robbery. Initially drawn to the white light that signals his path to ascension, he chooses instead to remain on earth as a ghost, to protect his young girlfriend (Moore) from an evil he doesn't yet understand. He has to come to terms with the fact that, as a ghost, he can pass unseen through walls and doors,³ but cannot interact physically with his environment and therefore cannot communicate directly with his partner. He eventually learns the trick from another ghost: by channelling his emotions and focusing his disembodied, ghostly mind on physical objects he manages to interact with them. Now, whatever it is that he has learned (the film doesn't say) is exactly what is required in dualist theories for a mind to exert direct influence in the physical world.

It would be a mistake to think that dualism is easily dismissed, however. In fact, dualism is insidious. Any theory of mind that tries to bring the act of thinking into some kind of central control room, where perceptions are interpreted, decisions are made and mechanical levers are pulled, is guilty of a creeping form of dualism. In such a central screening room of the mind, just who is meant to be doing the watching?

Materialists hold the view that mental states are the direct result of physical and chemical

events unfolding in the brain and the consequent development of specific brain states. Nerve cells (neurons) fire in different parts of the brain corresponding to vision, hearing, smelling, tasting, feeling, the processing of these sensory inputs in working memory, the retrieval of content from long-term memory, the triggering of both rational and emotional responses and the co-ordination of bodily movement. The relationship between brain chemistry and mental states appears to be very strong. Imbalances in the delicate chemical composition of the brain can result in a variety of mental disorders, such as Parkinson's, Huntington's and Alzheimer's diseases, schizophrenia, anxiety, depression and mania.

But there is considerable mystery here, too. We could suppose that the physics and chemistry is all there is, that mental states don't actually exist (no thoughts, no beliefs, no desires, no memories) and there are only brain states – various combinations of neuronal interaction that we interpret for ourselves as mental activity. This is a form of materialism generally known as *eliminative materialism*. A thought, then, does not exist except as a specific pattern of neuronal activity and we invent the idea of mental states as a way of explaining behaviour (ours and others).

An alternative is to take mental states to be the result of some emergent properties of highly complex activity in the brain. A pattern of neuronal activity is in itself not enough to constitute a thought; rather, a thought is a higher-order property of patterns of activity, a little like the properties of water (freezes to form a clear solid at zero Celsius, boils to a vapour at one hundred Celsius) can be thought of as higher-order properties of the sub-atomic particles – protons, neutrons and electrons – that make up the structures of hydrogen and oxygen atoms. Just as it might be very difficult to predict the bulk properties of water using only our knowledge of the properties of protons, neutrons and electrons, so it might be very difficult to predict the properties of mental states from the patterns of firing of individual neurons in the brain.

In this view, if we were able to build a structure with the brain's function and complexity (100 billion neurons, connected together and packed in grey matter with the consistency of cold porridge and weighing about three pounds), then we *might* expect consciousness, self-awareness and mind to emerge naturally.⁴

The fact is that we have various views but as yet no fully functioning scientific theory of the mind. You might worry that this will impair our ability to explore reality properly. Be reassured. It won't.

The second item of housekeeping concerns one particular Hollywood blockbuster movie. This is *The Matrix*, of course; the mother of all reality movies. It starred Keanu Reeves, Laurence Fishburne and Carrie-Anne Moss and was first released in America on 31 March 1999 – Easter weekend. It cost \$65 million to make, grossed a little over \$450 million at the box office worldwide, and became a worldwide phenomenon on DVD, a technology that could have been developed for movies such as this. It was followed in 2003 by two further films, *The Matrix Reloaded* and *The Matrix Revolutions*. I will have a little more to say about these sequels later, but for now I want to concentrate on the 1999 original.

There are already several good books about the philosophy and interpretation of the main themes of *The Matrix*, and these are included in the bibliography on [pp 241–5](#). This is not

another such book. Rather, this is a more complete exploration of reality and our knowledge of it which draws on some of the themes of *The Matrix* for illustration, at least from the perspective of reality at the social and perceptual levels. The film has little to say about our more scientific understanding of physical reality.

It is not necessary to have seen it to appreciate what I have written here. But it does help to be familiar with the story. Here, then, is the very briefest of outlines. Thomas Anderson works as a software engineer for a respectable company. By day, that is. By night he is a computer hacker with the alias Neo. He is approached by other famous hackers, Morpheus and Trinity, he 'follows the white rabbit' and meets Trinity in a nightclub. We have already seen Trinity in some earlier scenes performing some impossible kung-fu (and wearing some impossibly skin-tight PVC). She offers to help Neo understand the one question that drives him: *what is the matrix?*

Before anything else can be done, Neo is arrested and interrogated by what appear to be FBI agents. Of these, Agent Smith commands our attention. Smith reveals that they (whoever they are) know all about Neo's nefarious activities, and offers him a deal: they will wipe his record clean if he will lead them to Morpheus, whom they brand a computer terrorist. Neo refuses, and some things then happen to him that just can't happen in the real world. He wakes, and imagines he has been the victim of a rather compelling nightmare.

The next day he is contacted again by Trinity, some more impossible things happen to him and she takes him to see Morpheus. Morpheus offers him a choice of two coloured pills:

This is your last chance. After this, there is no turning back. You take the blue pill, the story ends, you wake up in your bed and believe what you want to believe. You take the red pill, you stay in wonderland. And I show you how deep the rabbit hole goes.

Neo takes the red pill, and discovers that his entire life and the lives of everyone he has ever known have been an illusion. In reality, his body is trapped in a capsule of viscous pink nutrient. A cable feeds electrical signals to the base of his skull, and thence to his brain. Everything he has ever experienced in his life has been a virtual reality simulation called the matrix,⁵ fed to his mind by a belligerent machine intelligence which, though originally created by humans, has now turned on them and is using human bodies as sources of energy. The matrix is used to keep passive the minds and hence the bodies of virtually the entire human race.

Because he has woken from the matrix, Neo is no longer useful as an energy source and is flushed from the capsule by the machines, down a waste pipe into the sewers. In a very real sense, Neo is born. Here, he is picked up by the real Morpheus and Trinity and taken on board their hovercraft, the *Nebuchadnezzar*. In the real world they are members of the last remnants of human resistance, with its base at the core of the earth. These resistance fighters routinely hack into the matrix, where they have learned to bend its programming rules – hence the 'impossible' kung-fu.⁶ The Agents are, in fact, sentient programmes developed by the machines to track down and destroy the resistance movement.

It turns out that Neo is potentially very important. Morpheus believes he is 'The One' – a Christ-figure⁷ who can completely break the rules of the matrix and bend it to his will, and ultimately deliver victory in the war against the machines. Neo is sceptical. Back in the

matrix he visits the Oracle, a kindly woman with the gift of foresight who has predicted the return of The One, but before anything further can be discovered the entire crew is betrayed to the Agents by a Judas-figure, fellow crew member Cypher.

Cypher has grown weary of life in the real world, and wants to have his mind returned to the matrix, as ‘... someone important. Like an actor’. Morpheus is captured. As commander of the *Nebuchadnezzar* he holds in his mind the access codes to the resistance movement's mainframe computer. With these codes the machines can completely destroy the last vestige of human resistance. Neo and Trinity rescue Morpheus from a secure government building in the matrix, in one long cinematic adrenalin-rush, and Neo realizes that he is indeed ‘The One’.

If you've seen the movie you will know that I've eliminated numerous embellishments, subplots and references to Buddhist philosophy. But for the purposes of this book, the key elements are all here.

The Wachowski brothers set out to make an ‘intellectual action movie’. Whether or not they achieved this, the film certainly achieved cult status and got people talking. This is not something the average Hollywood blockbuster product tends to do.

The interpretation of the sequels, *The Matrix Reloaded* and *The Matrix Revolutions*, is being actively debated by several internet communities. These sequels are much less concerned with our understanding of the nature of reality, however. Rather, they address other philosophical issues such as free will and the nature of human love, and evolve a storyline that continues to fuse together Western and Eastern religious mythologies. A complete interpretation of the entire trilogy is the subject of another book.⁸ For now, let's think of *The Matrix* in the context of the original.

Now, where did that rabbit go?

Social Reality
or
Is Money Real?

1

Hyperreal

It used to be said that we are what we eat. And then people, maybe a little more fashion-conscious, would say: No, you are what you wear. Or, you are what you read. But we would say, in this millennium, you are what you watch.

Peter Gabriel, *Growing Up Live*

Are you living in a dreamworld?

No, you respond, perhaps rather indignantly. You are certain in your conviction that you can tell dreams from reality. You are not in any doubt. You are not a dreamer.

And yet, there is a compelling argument that you're not living in a real world at all. You are living in a world created almost entirely by the modern consumer society of which you are a part. You work hard and earn money just so that you can pursue a dream in a world fabricated almost entirely from your fertile imagination, aided by a relentless barrage of images from the media, in which it has become impossible to distinguish image from reality, style from substance. Some would argue that this is a world that has become a simulation, one in which all contact with or reference to the 'real' reality beneath has been lost. A world where, according to the postmodern social theorist Jean Baudrillard, the images and the style and the substitutes have become more real to us than reality itself. This is *hyperreality*.

It is the first stop on our journey in pursuit of the rabbit.

*

For sure, this is still a world of physical things, of houses and cars and planes and credit cards. But these physical things have become much less important than the images they create, or the messages they send. So, we no longer drive a car, we drive the ultimate driving machine, one with *Vorsprung durch Technik*, hand-built by robots. We board a plane and fly the friendly skies, with the world's favourite airline. We use a credit card because it's everywhere you want to be, your flexible friend, and you don't leave home without it. We buy consumer goods that are designed for living, made with us in mind, through the appliance of science. We talk to our friends on the phone because it's good to talk, and the

future's bright. We drink probably the best lager in the world, because it's reassuringly expensive, because it's what your right arm's for and we couldn't give a XXXX for anything else. We try harder. We just do it, because we're worth it and we know where we want to go today.

You will insist that you can tell the difference between reality and the images woven by the marketers, the public relations executives, the government spin doctors, or the news media. But you can't.¹ In every case what you receive is an imperfect representation or a simulation of reality that will be more or less distorted, depending on what's being sold, or the size of the lie. Baudrillard insists that in hyperreality, the representation no longer bears any resemblance to anything that we might otherwise accept to be real.

Modern consumer society runs on a simple principle. We are fed an illusion of what we would want our world to be: a world in which we are more handsome or beautiful, slimmer, more successful, more respected, cleverer, richer, happier. We allow ourselves to become convinced that we can achieve this world if only we buy this car, own this home, this stereo, this mobile phone, read this book, eat this food, drink this beer, use this credit card, fly this airline.

Aspiring to this world keeps us in wage slavery, functioning as perfect consumer units, to the point where it is no longer necessary to feed us the illusion: we *are* the illusion. Not for nothing is it called the American dream. In the twenty-first century, the dream has become our reality. We are living in a dreamworld.

I'm reminded of a joke.

A senior partner of a global management consultancy company suffering from overwork, stress and nervous exhaustion decides to take an extended holiday. He stays at a tiny Mexican fishing village, a long way off the tourist map. Late one afternoon he finds himself in conversation with a local fisherman. He asks the fisherman about his life.

'Well,' the fisherman replies in halting English, 'I sleep late. Take the boat out in the early afternoon and catch enough fish for my family and some more to sell so that I have money to buy other kinds of food and a little wine. When the sun goes down I join my friends at the local bar and we drink and we talk. Then I go to bed.'

The consultant is intrigued. 'Why don't you get up earlier, go out in your boat a little longer, and catch even more fish to sell?' he asks.

'Why would I want to do that?' the fisherman responds.

'Well, with the extra money you could save up and buy another boat, and employ another fisherman and catch even more fish.'

'So, what would I do then?'

'Well, with the extra money you could continue to buy more boats – maybe a trawler or two – and recruit more fishermen, and before long you would have your own fishing fleet.'

'What then?'

'Then you would have a healthy balance sheet that you could take to a bank or investment company, and you could get financing to buy up other fleets. You could take your company public and trade shares on the New York stock exchange. You could build a fishing empire

and then think about diversifying, maybe into the wider agricultural sector or maybe the leisure industry or anything you like. You could become a Fortune 500 company, with your picture on the front of *Forbes* magazine.'

'What then?'

'Well, hey, then you could sell up. You would have a personal fortune. You could live the life of your dreams, with no more stress and worry. You could settle in some little village, sleep late in the morning, maybe take a little boat out to do some fishing and spend the evenings with your friends at the local bar...'

The joke highlights the absurdity of some aspects of our modern consumer culture. We struggle to make our way through the reality of our complex social existence, striving to earn enough to buy things we don't need, pay off the mortgage, pay the bills, the school fees, the expensive holidays, and so achieve our world of the imagination, our dream of a simpler existence. In our complex lives, simplicity is bought only at a high price, it seems.

Why? What is it about us and the society we live in that creates this kind of reality?

Let's go right back and start at the beginning.

Evolution through natural selection can be crudely interpreted as 'survival of the fittest', which we take to mean that living organisms best adapted to their environment are more likely to live long enough to procreate and pass their genes to successive generations. In the presence of selection pressures, chance adaptations resulting from random mutations in genetic material can give rise to better-adapted organisms which may then come to dominate a particular ecological niche.

One view has it that *Homo sapiens* is the most successful higher-order species on the planet. Whether you agree with this or not, if nothing else the spread of humankind from its origins on the plains of Africa to virtually every habitable part of the globe signals highly successful adaptation. All of this success is down to the capacities of our brains and, however it is done, the brain's ability to generate an extraordinarily complex mental life.

I like to think that, whatever initial evolutionary advantage was created by the chance adaptations that led to a larger brain, this was more than superseded by the sheer scope and agility of the mind that emerged. Our minds do not need to have anywhere near the sophistication that they possess for us as humans to survive in or even dominate our environment. We do not need such highly developed minds in order to survive. In this view, the richness of our mental life may well be an unintended by-product. All evolution is accident, but our minds may be the biggest accident of them all.

Much of this mental richness is gained from the external world, both the world as we find it and the world that we create for ourselves. Reality in all its variety impresses itself upon our minds: high, snow-capped mountains, gently trickling streams, tall trees, soft, brown earth. But there is obviously more to our mental lives than the passive impression of an external reality resulting from an ability to observe. Here lies the secret. With our highly developed minds we can also have *imagination*.

With imagination we can see things that do not yet exist. We can anticipate things we haven't yet experienced. We can envisage a future yet to come. We can plan.

Our ability to think about how things could be rather than just how things are feeds right back into our external reality. For about 1.4 million years humans have used this feedback to hunt animals, catch fish, gather wild roots, berries and vegetation and build nomadic communities of no more than about fifty people. The transition from hunter-gathering to agriculture led to the establishment of larger societies, and marginalized those small communities that preferred to stick with the older methods.

Humans are social animals, perhaps with an innate biological drive for social interaction. We do not just live in society: we invent society in order to live.² The first towns started to appear about ten thousand years ago. With the rise of science, technology and industry in the last few hundred years came the possibility of establishing societies on a vast scale, and our external reality is now filled with cities nestling close to the mountains, bridges over the streams, and carefully tended parks filled with tall trees and soft, brown earth.

Within these physical structures there exist breathtakingly complex social structures. These social structures are founded on a broad array of institutions which purport to provide ready-made solutions to the kinds of everyday problems that most ordinary people face. Humans develop society and society develops an infrastructure to provide education, healthcare, economic management, a system of law, organized religion, defence against other societies, governance and personal support for individuals and families. This infrastructure operates through a cascade of social institutions, such as money, marriage, politics and war, woven into a near-invisible fabric.

It has been estimated that a hunter-gatherer typically needs to expend about one calorie of human energy in pursuit of three calories of food-energy. In a hunter-gatherer society, you are what you eat. With the emergence of food production on an industrial scale, expending one calorie of human energy provides something of the order of five thousand calories of food-energy. With the external environment largely conquered, and where it is no longer necessary to devote great time and effort in pursuit of the things needed to sustain life, the human mind with all its extraordinary sophistication turns its attention to other needs. In a very different but very real sense, we are still what we eat, as the irresistible rise in obesity in America and Britain signifies. But this is not eating to survive, it is eating to feed emotional needs, or eating as a lifestyle choice.

Imagination allied to emotion fosters desire. This can be a biologically driven desire for things: to assuage hunger, to quench thirst, to have sex. It can also be a socially driven desire to belong, to gain greater self-esteem, to acquire greater status and prestige, to be respected by others.³ Furthermore, we use our imagination to fend off that most insidious form of torture for the developed mind, boredom. We no longer desire nourishment for our bodies, but for our minds. We demand stimulation and entertainment to provide us with distraction. We become what we wear, or what we read, or what we watch.

This ability to have emotional and socially driven desires kindled to the intensity of a furnace by a hugely fertile imagination has led to the creation of our consumer society. We now live within a reality that has become a complete invention of our postmodern urban, industrial society and media culture. To some it has become a dreamworld, a hyperreality, no longer based on anything identifiably real.

Think back to the American society of the 1950s. This was a period and a place that witnessed a tremendous acceleration in the development of our consumer culture. Selling goods and services to increasingly sophisticated consumers in a vast American market became so lucrative that companies committed considerable effort and expense to the task of understanding how it works. The disciplines of professional marketing and consumer advertising came into their own.

These companies learned that consumers bring all their rationality *and* their emotional needs to bear on their purchase decisions. Yes, consumer products had to fulfil their physical functions, but so long as these functional requirements were satisfied then there were a whole raft of emotional requirements to be satisfied, too. If these emotional needs could be met successfully and in a manner that could be sustained over time, then extremely valuable brands could be created that were next to impossible for competitors to copy. This was an age that also saw the rise of super-brands, such as Levi jeans, Marlboro cigarettes and Coca-Cola.

These brands could help make consumers feel better about themselves, or create the impression of status and prestige, or earn them greater respect. Recall the styling of the huge American cars from this period, the 'gas-guzzlers'. Many had elaborate tail fins that were an aerodynamic nonsense. Functionally, these fins created more drag and actually slowed the vehicle down. But they gave the illusion of speed, or spoke to consumers of a speed that was more pure or absolute because it was not contaminated or constrained by any physics of the real world, and this was more important to them. Style triumphed over substance.

Any doubts about the power of a super-brand were dispelled in the 1980s, when the Coca-Cola company, one of the most successful of the global consumer marketers,⁴ made a near-catastrophic mistake. Faced with declining sales, and unnerved by the results of blind taste tests which showed their archrival Pepsi-Cola to have the better product (the 'Pepsi Challenge'), the Coca-Cola company decided that the time had come to change a product formula that had remained unchanged and locked in a vault for over eighty years. They developed a new, slightly sweeter formula and launched the product in America amidst a blaze of publicity, as New Coke. It was a disaster.

They had lost sight of the fact that most consumers had long ceased to buy their product solely for the taste. They were buying it because it had become an intrinsic part of American cultural identity, with deep emotional links to the American psyche. Changing the product was just plain anti-American. Within weeks of the launch of New Coke, a campaign was begun by consumers to force the company to give them back the original Coca-Cola, to give them back the 'real thing'. They won.

Although the campaigners remarked negatively about the taste of New Coke, this was not after all, a campaign about taste. The company had not been misled by the results of its blind taste tests. When deprived of knowledge about the brand, consumers chose Pepsi because it had the better taste. What the company had failed to understand was that consumers bought Coca-Cola not because of the taste but because it was Coca-Cola, a total package of physical taste, imagery and emotional satisfaction. Change any one of these and you no longer had Coca-Cola. Changing the taste was tantamount to taking the brand away from consumers.

Acknowledging their mistake, the company backed down and re-launched the original as

Classic Coke (and, incidentally, succeeded in not only restoring but increasing their market share).

With our attention drawn ever more compellingly to brands, the complexity of mass production means that we have completely lost sight of how modern consumer goods relate to the real world. We buy the package of physical functionality and emotional satisfaction without ever stopping to wonder where the physical product has come from, what it is made of, or how it has been put together. We have largely ceased to buy products because we value the use to which we can put them; we buy products because of what they say about us, to ourselves and to others.

Witness the collection of incredibly useful labour-saving modern gadgets you own that are so incredibly useful that you rarely, if ever, use them. We buy the style, not the substance; the brand, not the product. We construct a reality based on models of how we would like the reality to be, not on reality itself.

The rise of the consumer society triggered an explosion of mass communications media. Getting your message across in an ever-more crowded 'information space' was fundamental, not just to consumer marketers, but to anyone who wanted to grab the consumers' attention, including politicians, charities and pressure groups. It has been estimated that today each of us is on the receiving end of a staggering 1,500 marketing messages every day. And we have surely not reached the end of human inventiveness when it comes to ways of channelling messages directly at consumers. In Steven Spielberg's film *Minority Report*, set fifty years into the future, people entering a shopping mall are first recognized individually by their retinal images and then constantly bombarded with marketing messages aimed directly at them, by name, as they walk around.

The basis for exploiting mass media had already been established in the 1930s by, among others, Austrian-born Edward Bernays, the 'father of public relations' or the 'father of spin', nephew of Sigmund Freud. Bernays was a highly successful publicist, the first to use theories of human psychology and social science to develop persuasive publicity campaigns in what he referred to as the 'engineering of consent'. He was also among the first to use the endorsement of leading opinion-formers and experts in support of his campaigns – often without their knowledge. Exploiting the pact between celebrities hungry for lucrative advertising revenue and the 'oxygen of publicity' and marketers or PR executives seeking celebrity endorsement of their products remains extremely significant in modern marketing.

In his most influential work, *Propaganda*, first published in 1928, Bernays wrote:

The conscious and intelligent manipulation of the organized habits and opinions of the masses is an important element in democratic society. Those who manipulate this unseen mechanism of society constitute an invisible government which is the true ruling power of our country... We are governed, our minds are molded, our tastes formed, our ideas suggested, largely by men we have never heard of.

Bernays certainly practised what he preached. In 1929, a group of debutantes marched down New York's Fifth Avenue, openly defying the social conventions of the day by smoking cigarettes in public. They were dubbed the 'torches of liberty contingent'. We might today applaud this early expression of female emancipation, this bold action against a male-

dominated society which imposed insidious inequalities through exactly this kind of social taboo. Until, that is, we learn that the march was organized (and paid for) by Bernays, on behalf of the American Tobacco Company. After this stunt, smoking in public rapidly became an acceptable form of social behaviour for women, and sales of Lucky Strike rocketed.

Of course, manipulation of the public mind can be an instrument of evil as much as it is an instrument of publicists and marketers, as Bernays himself discovered in the late 1930s on learning that his own work was being used by Joseph Goebbels to wage a propaganda war against German Jews.⁶

If the principles of manipulation of organized societies were established by Bernays and his contemporaries, then it was the Canadian Marshall McLuhan who some thirty years later established the nature and influences of the mass media. McLuhan argued that each communications medium has its own intrinsic impact which is its unique message, independent of whatever content the medium may be carrying. The message of any medium (or any technology) is the change of scale or pattern of society that results from its use. The introduction of new forms of transportation such as railways or motor cars did not just increase the speed and volume of human traffic, it transformed societies and the ways people live and work in them. So too, McLuhan argued, the introduction of print, radio, film and terrestrial television (and we would now add satellite and digital television, mobile phones, video and DVDs, electronic mail and the internet) has been similarly transforming. McLuhan wrote that it is the 'medium that shapes and controls the scale and form of human association and action.' The medium *is* the message.⁷

We can see this played out in the compelling rise of reality television. Thursday, 11 January 1973 witnessed an event that was to change our relationship with the medium of television, probably forever. The first episode of a new series entitled *An American Family* was broadcast. The series chronicled the day-to-day lives of Bill and Pat Loud and their five children, a typical middle-class American family living in Santa Barbara, California. It was the first 'fly-on-the-wall' documentary (soon followed in Britain by *The Family* and in Australia by *Sylvania Waters*).

The Louds' marriage disintegrated live on television and headed towards divorce. Their eldest son announced his homosexuality. An appetite developed for the voyeuristic examination of the lives of ordinary people, where we could 'get up close and personal' but maintain a detached, clinical distance. Television was the perfect medium for this.

This appetite has given us the *Jerry Springer Show* and *Big Brother* and the genre's many spin-offs. We are now invited to watch a group of 'real' people (sometimes celebrities) attempt to negotiate their way through absurd challenges, internal rivalry and social tensions much as we would watch laboratory rats attempt to negotiate a maze. Television it is, reality it's not.

Whilst reality television is intended as light entertainment, a kind of chewing gum for the mind, Michael Moore's film *Bowling for Columbine* is (at least in parts) a more thoughtful and thought-provoking examination of the darker influence of the medium of television. The film is an investigation of American gun laws and gun culture and their relationship with the Columbine high school massacre. The film targets prevailing gun laws and the American constitutional right to bear arms, but these appear strikingly less important in determining the incidence of firearms-related deaths in America than a culture of fear and prejudice, fed

relentlessly by news media obsessed with violent crime: 'if it bleeds, it leads'. Against a background of falling rates of violent crime in Britain, the public perception is nevertheless that society is a more dangerous place than ever. When asked to justify their perception, many will refer to things they have seen on television, forgetting that they were watching fictional drama. They have lost sight of the difference between reality and invention.

Does the media hold up a mirror to modern society and its culture, and passively reflect it back to us? Or does the media hold up a lens so distorting that it contributes to and reinforces the invention of a hyperreality, a virtual reality with no foundation in the real world?

In *The Matrix*, we first meet Neo late one night alone in his apartment. It is the apartment of a computer geek, filled with the junk of modern information technology. He has fallen asleep in front of his computer, oblivious to the music blaring in his ears from a pair of headphones. He is woken when his computer starts to write messages to him. He tries to stop the messages but it becomes clear that he is no longer in control of his computer.

The screen tells him to 'Follow the white rabbit', then: 'Knock, knock, Neo.' There comes a knock at the door, and the screen goes blank. Not sure if this experience was real or part of a dream, Neo opens the door to Choi, and some of Choi's friends. Choi has come to buy some illegal software. Neo reaches for a book, *Simulacra and Simulation*, by Jean Baudrillard. The book is indeed a simulation, being nothing more than a hollow fake. Inside Neo keeps a collection of computer disks, all of which we assume hold illegal programmes. He picks one out and hands it to Choi.

Few who saw *The Matrix* will have heard of Baudrillard or postmodernism. The book itself appears so briefly on screen that it is hardly possible to identify it.⁸ And yet Andy and Larry Wachowski, the scriptwriters and directors, were obviously seeking to make some subtle point. In addition to many months of kung-fu training, Keanu Reeves was also asked to study *Simulacra and Simulation* in preparation for the part of Neo. When Morpheus finally introduces Neo to the 'real' world, a charred relic of an otherwise familiar late twentieth-century cityscape huddled beneath a blackened sky, Morpheus refers to it as the 'desert of the real', a Baudrillard phrase.

Specific reference to Baudrillard is made in the shooting script of the original movie. At one point Morpheus says: 'You have been living inside a dreamworld, Neo. As in Baudrillard's vision, your whole life has been spent inside the map, not the territory.' This reference did not make it from the shooting script into the movie's cinema or DVD release.

So, who is Baudrillard? What does he have to say about reality that the Wachowski brothers wanted to acknowledge through these references?

We measure the success of a simulation in terms of the extent to which it resembles the reality it is simulating, the extent to which we can tell the difference between reality and simulation. According to Baudrillard, a first-order simulation is one in which an imperfect representation is rendered. Examples might include a novel which attempts to create a mental world for the reader that represents or reflects the real world but leaves much still open to interpretation, or imagination. It could be a painting which, no matter how artistically accomplished, is still a two-dimensional representation of a real three-dimensional scene. Or

it could be a map which shows us where everything is in relation to everything else but still suffers from the fact that it is a two-dimensional representation (drawn to scale) of the surface of a sphere.

A second-order simulation is one that so perfectly resembles reality that it could be mistaken for reality itself. The starting point for Baudrillard's essay 'The Precession of Simulacra', which is included as the first chapter in *Simulacra and Simulation*, is a fable told by the Argentine poet and philosopher Jorge Luis Borges. This fable, *On Exactitude in Science*, concerns an Empire whose map-makers strive for perfection:

In time, those Unconscionable Maps no longer satisfied, and the Cartographers Guilds struck a Map of the Empire whose size was that of the Empire, and which coincided point for point with it.

The cartographers produced a full-scale map of the territory of the Empire so accurate that it was no longer possible to tell the difference between the territory and the map, between the real and the simulation. The fable continues to tell of further generations of cartographers who rejected the usefulness of this map. They cast it aside and left it to rot in the 'Deserts of the West', where it remained, in tattered ruins.

A third-order simulation, then, is one that *no longer has a basis in anything real*. This is hyperreality. It is a virtual reality without reference to reality, a map for which there is no territory. And, Baudrillard asserts, this is what has become of the modern consumer society within which we live out our lives. Society is an abstraction, a virtual reality without reference, a hyperreality, with no basis in anything we can discern to be real.

It is the generation by models of a real without origin or reality: a hyperreal. The territory no longer precedes the map, nor does it survive it. It is nevertheless the map that precedes the territory... that engenders the territory... It is the real, and not the map, whose vestiges persist here and there in the deserts that are no longer those of the Empire, but ours. *The desert of the real itself*.

Baudrillard uses two examples from American culture and modern American political history to highlight the nature of hyperreality. These are Disneyland and the Watergate scandal.

Disneyland in California (or Disneyland in Paris or Tokyo or Walt Disney World in Florida) is an enclosed world of childlike imagination. It is fantasy theme-park entertainment on a grand scale, the 'happiest place on earth', derived in part from the themes and characters of children's fairy tales, as interpreted and adapted to suit modern tastes. It is a place to take children, though many adults visit without the excuse of children in tow.

Disneyland is not real in a multiplicity of ways. Most obviously the buildings – such as the fairy-tale castle – are clearly exaggerations of real buildings that will never be found in this form in the real world. Most adults who visit the attraction speak of Disneyland's dream-like quality and its marvellous attention to detail. The image is not spoiled by the intrusion of real-world practicalities. A dead light bulb, for example, is just never seen. Either bulbs are replaced before they expire or they are instantly replaced so as to create the illusion of a perfect world. There is no litter. Should any customer drop litter, it is removed almost immediately by a seeming army of Disneyland employees armed with long-handled dustpans. The levels of personal service inside Disneyland are extraordinary, and most adult visitors will have some tale to tell of the experience of excellent service.

The unreality of Disneyland is not Baudrillard's point, however. The real point about Disneyland is that the purpose of its picture-book unreality is to disguise the fact that it is America itself that is hyperreal.⁹

Disneyland exists in order to hide that it is the 'real' country, all of 'real' America that is Disneyland... Disneyland is presented as imaginary in order to make us believe that the rest is real, whereas all of Los Angeles and the America that surrounds it are no longer real, but belong to the hyperreal order and to the order of simulation.

Baudrillard uses the example of Watergate in a similar argument. During the 1972 presidential election campaign, officials of the Committee to Re-elect the President were involved in a break-in at the offices of the Democratic National Committee, at the Watergate building in Washington, DC. A number of administration officials resigned, some were later convicted of offences related to an attempted cover-up. The incumbent, President Richard M. Nixon, denied involvement, but was subsequently caught on tape actively seeking to derail the investigation. Nixon resigned in August 1974 to avoid almost certain impeachment.

This undeniable evidence of corruption in the Nixon administration was not, Baudrillard says, the real scandal of Watergate. The scandal is that government is fundamentally unprincipled and immoral. The purpose of Watergate was to provide an instance in which rare and aberrant wrong-doing by an elected government is uncovered, and the guilty punished, in order to sustain the illusion that wrong-doing by an elected government is rare and aberrant. Nixon's resignation 'to begin a process of healing' allowed the American public to draw a line under the scandal and re-establish faith in the moral principles of democratically elected officials (and, in turn, the moral principles of the society that such officials represent). Like Disneyland, the purpose of the obvious 'unreality' of Watergate is to disguise the fact that in hyperreality no such moral principles exist. With no territory to relate to, the map establishes its own landmarks.

This, then, is one sub-text of *The Matrix* and of Cypher's betrayal. The virtual reality simulation of the matrix is a metaphor for the hyperreality of modern American society (and more widely, of modern consumer society everywhere). Our perceived reality of existence in society is based on models, or maps, not the real world itself. Neo takes the red pill and is 'liberated' from his previously unconscious existence within this prison for his mind. He is woken from the American dream. It is no coincidence that life in the real world aboard the *Nebuchadnezzar* is cold, harsh and brutal. It has a gritty realness.

This interpretation of the matrix should not, in my opinion, be taken too literally, which is why I prefer to think of it as a sub-text. Remember, in Baudrillard's definition, a third-order simulation has no basis in *any* reality. Waking from hyperreality does not entail waking into anything that can be considered to be more real, as there is no reality. There can be no red pill to free us from Baudrillard's vision. However, in *The Matrix*, the division between the real world and the virtual reality simulation of the matrix is made clear both in the script and cinematographically, through the use of different lighting effects and filters. Waking from the matrix does imply waking into the real world.

Some have argued that the close identification of the matrix with hyperreality breaks down owing to the fact that, consciously or not, society creates hyperreality for itself, whereas the

humans imprisoned in the matrix have virtual reality forced upon them. This is resolved in *The Matrix Reloaded*, when it becomes apparent that humans have indeed been given a choice at the 'near-unconscious level'.

A much stronger criticism is that the Wachowski brothers have tried to raise awareness of Baudrillard's rather pessimistic postmodern critique of consumer society using the very vehicle – a money-spinning Hollywood blockbuster full of violent action spectacle and computer-driven special effects – that appears to be such an integral part of modern consumer society. The live action films (and the computer games, and the animated movie, and the book spin-offs) form a package directly targeted at young, thrill-seeking consumers.

But still, if you wish to raise awareness of some interesting ideas concerning modern society and the nature of our social reality, where better to place them than in a movie franchise destined to reach millions? The message is channelled through a favoured medium of popular culture because that's where the people are.¹⁰

Perhaps the Wachowski brothers want to do no more than challenge our thinking. When Cypher cuts a deal with Agent Smith, he requests that his body be re-inserted into a capsule in the power plant, that his memory be erased and that his mind be returned to the matrix, as someone important, such as an actor. Trinity reminds him that the matrix isn't real, but Cypher disagrees. He believes that the matrix can be more real than the real world: 'I'll go back to sleep and when I wake up, I'll be fat and rich and I won't remember a goddamned thing. It's the American dream.'¹¹ Cypher has concluded that what matters to him is not the physical world, but the mental world. He will happily sacrifice his body to the machines in order to live what he considers to be a more fulfilling mental life.

Cypher's actions have sparked numerous philosophy class debates about the blissfulness of ignorance. Given a free choice, what would *you* do? Live in the cold, harsh artificial light of the real world, 'eating the same goddamn goop every day'? Or, like Cypher, would you prefer to go back to sleep, all memory of the real world erased, be rich and famous and live out the celebrity lifestyle of your dreams?

Think carefully before answering.

On the one hand, Baudrillard's rather pessimistic vision is a dead end. We may have no difficulty recognizing hyperreality as this, after all, is where many of us live and work. Spend even a small amount of time working within the culture of a large company, or an academic institution or in the presence of celebrities and you will get a very strong sense of what a truly hyperreal existence might be like.

On the other hand, Baudrillard is a postmodern critic, not a philosopher in the traditional sense. His task is to bring to our attention and criticize aspects of modern society, and seek to make us think differently about some of the things we take for granted.

Hyperreality is a kind of social conditioning that leaves us unable to perceive anything beyond the models and the maps. It is not necessarily concerned with what does, or does not exist. We might conclude that there is still a physical world, of mountains and streams and trees and earth. We might also conclude that there is still a social world, of people, cities, money, marriage, politics and war. There is nothing in Baudrillard's writings to shake our initial conviction that there does exist a reality independent of our ability to conceive it or

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