Philosophy in a Technological World

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Preface

I discovered calypso while I was writing this book. It originated in Trinidad in the nineteenth century and was first recorded in 1912, five years before jazz. My 'calypso craze' happened rather late – I think most of the world had it in the 1950s. But it did at least happen and I cannot thank my friend Allan Gonzalez Estrada enough for that. Thanks to Allan, I had Tiger, Caresser, Radio, Growler, Melody, Kitchener, Sparrow, Fighter, Walter Ferguson and Cro Cro to help me through the writing process; he even got Ferguson to record a personal message to me. Calypso contains plenty of philosophy and some of the calypsonians had their own concerns about technology: Growling Tiger's 'Atomic Energy Calypso', Mighty Spoiler's 'Mad Scientist' and Walter Ferguson's 'Computer' are all good examples – but note that I was not influenced. There is even a fragment of calypso lodged firmly within the mainstream of academic philosophy. For every philosopher knows half a line from Roaring Lion's song, 'Ugly Woman', since it inspired the title of W.V.O. Quine's *From a Logical Point of View*: 'Therefore, from a logical point of view', sang Lion, 'always marry a woman uglier than you.' I failed to heed that advice but it turned out just fine. It was during a memorable late-night barbeque with my wife, Zo Hoida, that she came up with my favourite line in this book (at the end of Section 3, Chapter 3); I only had to clean it up a little bit. My best friend, Commander Steve Forge of the Royal Navy, inspired the discussion of Steven Pinker and John Gray (Section 4, Chapter 5). Raymond Tallis's questions about the penultimate draft led me to the missing links in the argument of the book, which transformed the final product into what I always wanted it to be; Kelly Harmon's questions and reservations were very helpful too. The draft they read had

already been seriously improved by Stephen Leach's judgement and learning. Simply knowing some people helps me do what I do, so a big shout out to: Adam Balmer, Kieran Brayford, Alex Brecker, Tom Clark, Tim Crane, Jacob Fox, Philip Goff, John Horton, Adam Kimberley, Alan Malachowski, Jennifer McCarthy, Martin Müller, Sila Özdemir, Bjørn Ramberg, G.A.J. Rogers, Artur Szutta, Natasza Szutta, Steve Tromans, J.J. Valberg and Emil Visnovsky.

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A Note about the Endnotes

As in *Philosophy in a Meaningless Life*, I have referenced endnotes in two different ways: superscript[1] when I have something additional to say and subscript$_1$ when I am mainly just providing bibliographic information or making connections to other texts. That way you never have to turn to the end of the book to find nothing but a page number.

Introduction: Disturbed by the Thought of Philosophy

The titan Prometheus defied the gods to give human beings the gift of fire. It was a dangerous magic with the power to hurt, destroy and transform, which gave us warmth, light and comfort. Prometheus's magic fascinated us and still does. In gratitude for his gift, we devised a philosophy in his honour named 'materialism'.

Physical science has allowed us to find innumerable technological applications for Prometheus's gift, as has precision engineering and many other endeavours that are not physics. The current manifestation of the materialist philosophy maintains that physical science tells us the ultimate truth about reality. Materialism dominates our world as secular common sense when it comes to philosophical matters. Outside of academic philosophy, it is very widely supposed that everything that exists ultimately consists in the particles and forces described by physics, and that existence itself began with the Big Bang. Where there is disagreement with this picture, it is most likely to have religious inspiration. Materialism is the respectable default within today's academic philosophy too, in that it is the only philosophy of the nature of reality which can be presupposed without argument in a journal article, with any suggestion of difficulties for materialism being automatically deemed worthy of interest. Materialism, as Hilary Putnam observed in the 1980s, and as is no less accurate today, is the only metaphysical philosophy with 'contemporary "clout"'.[1]

Given this situation, you might be forgiven for expecting scientists, and especially physicists, to love philosophy. But

although many working scientists do indeed, the message being sent out about philosophy by the most prominent public spokespeople of science in their popular books, broadcasts, interviews, and – increasingly – social media, is so thoroughly negative as to be puzzling.

The best-known example is:

Philosophy is dead.

Stephen Hawking said that – the greatest hero of recent science, who overcame debilitating illness to revolutionise our understanding of black holes.[2] Why did he say it? Because he did not think philosophy had kept up with the latest developments in physics. But why should it? Division of labour requires that chemists focus on chemistry, accountants on accountancy, and philosophers on philosophy. Imagine there being some future breakthrough in biology which is relevant to physics, but which physicists ignore. It might then be appropriate for a prominent physicist to chastise their own profession for not keeping up with developments in biology, but not for a biologist to declare that physics is dead. Hawking's statement suggests that philosophy is unique among academic disciplines, other than physics, in being something physicists know best about; and materialist philosophy does say something in that vicinity. Despite what Hawking believed, however, many philosophers have gone to extraordinary lengths to keep up with contemporary science, and particularly physics.[3] If he was just badly informed, and a philosophical focus on physics is what matters most, then what he should really have said is that philosophy has never been healthier.

Astrophysicist Neil deGrasse Tyson agrees wholeheartedly with Hawking's statement. During a knockabout interview in which a variety of philosophical questions had been discussed, and practically nothing else – for example, Tyson speculates about whether the universe is a computer simulation, and if it was, whether he would choose to stay within it (he would not) – the interviewer mentions that he studied philosophy at university. Tyson immediately butts in:

That can really mess you up![4]

They all proceed to laugh at how 'futile' philosophy is, with the interviewer calling it 'a fat load of crap', and Tyson correcting the suggestion that it is good for comedy, since 'you need people to laugh at your ridiculous questions'. He tells the one about the scientist and the philosopher crossing the road – the scientist says to the philosopher:

> Look, I got all this world of unknown out there. I'm moving on. I'm leaving you behind. You can't even cross the street because you are distracted by what you are sure are deep questions you've asked yourself. I don't have the time for that.

Here we see to the heart of his sentiment: keep moving on and never let philosophical qualms get in your way. The story might have ended with the scientist being run over. According to Tyson's history, however, philosophy once helped science to move on before it was left behind by the scientific revolutions of the 1920s, after which it became a hindrance. And yet ever since the late 1950s, when Tyson was born, philosophy has embraced materialism.

The particle physicist Brian Cox has said:

> I don't 'do philosophy' in the same way that I don't 'do homeopathy'.[5]

Homeopathy has been scientifically discredited – after a substance has been diluted to the prescribed levels it is ineffective. But since there is no testable claim that all philosophy relies upon, this makes you wonder what Cox thinks philosophy is. The answer both he and Tyson are working with, I suggest, is that philosophy is anything you *cannot* scientifically test. When discussing the origins of reality, for instance, Cox says there is some speculation among scientists that the Big Bang may not have been the beginning of the universe, since the universe may have always existed. Then he says: 'Whether or not this would be a satisfying answer is up to you. I'd be comfortable with it.'[6] What he must mean by a

'satisfying answer' is a philosophically satisfying answer, since he cannot be allowing that the science could ever be a matter of personal satisfaction and comfort. That would explain the comparison to homeopathy. The believer in homeopathy ignores science because they find homeopathy satisfying, just as the philosopher ignores science because they find certain philosophical views satisfying. Not all reasons are scientific reasons, however, and philosophy is famous for its focus on arguments and reasons. I expect Cox thinks long and hard about non-scientific reasons when deciding how to vote, for example.

According to biologist Richard Dawkins, the physicist Lawrence Krauss's book *A Universe from Nothing: Why there is Something rather than Nothing*, may deal the deadliest blow to religion since Darwin's *On the Origin of Species*.[7] From 'staggeringly beautiful experimental observations', as Krauss puts it, he discovered that 'getting something from nothing is not a problem'. Since the idea of observing nothing is very puzzling, Krauss realises he needs to say something about philosophy at the start of the book:

> I have learned that, when discussing this question in public forums, nothing upsets the philosophers and theologians who disagree with me more than the notion that I, as a scientist, do not truly understand 'nothing'.[8]

He then presents a philosophical argument:

> For surely 'nothing' is every bit as physical as 'something,' especially if it is to be defined as the 'absence of something'. It then behoves us to understand precisely the physical nature of both these quantities. And without science, any definition is just words.

If 'nothing' has a physical nature then 'nothing' is something with a physical nature. If that is 'just words' then what Krauss said is too, since there is no science behind it. It seems to me that if you want to avoid philosophy, you cannot do so by making ill-considered philosophical claims while showing disdain for philosophy, any more than you can avoid a game by playing it

badly and saying you do not like it. If Krauss is uninterested in the philosophical question – which I find hard to believe given the area he went into – then why do everything possible to create the impression that this is the question he has answered, while letting Dawkins talk about religion at the end of the book? He could have easily avoided the issue by claiming to have shown how the universe sprang from a 'minimal something', for instance. That he did not reveals the influence of the materialist philosophy: he was driven by the thought that physics cannot be allowed to leave such a large and obvious mystery unaddressed. When David Albert, a philosopher of science with a solid background in theoretical physics, reviewed the book to point out that Krauss's understanding of 'nothing' obviously has a very strong bearing on the philosophical issue, Krauss called him a 'moronic philosopher'. He later apologised, while restating his claim about definitions needing science, and saying that philosophers who cannot accept this do not interest him, the others being okay.[9]

Not all public physicists are quite so negative about philosophy, but the need to pass judgement on it does seem to obsess them. Going back in time a little to the 1990s, we find a chapter of Nobel laureate Steven Weinberg's book, *Dreams of a Final Theory*, entitled 'Against Philosophy', in which he does at least find a positive use for it: for dismantling philosophical preconceptions which get in the way of science. The ultimate goal of this task would presumably be for nobody to think philosophically about science anymore.[10] But if we go back even further, we see what a recent phenomenon this all is. Consider the most acclaimed publicly engaged physicist of all, Albert Einstein:

> A knowledge of the historic and philosophical background gives that kind of independence from prejudices of his generation from which most scientists are suffering. This independence created by philosophical insight is – in my opinion – the mark of distinction between a mere artisan or specialist and a real seeker after truth.[11]

Einstein was always interested in philosophy and made it his business to converse with philosophers, fully aware that his work

had many possible philosophical implications which needed to be worked through and rationally debated.

But perhaps we should put aside physics to see if a rosier view of philosophy is presented by spokespeople for other sciences. Psychologist Steven Pinker delivers just that throughout his various works, but even here there is an important caveat:

> Today most philosophers (at least in the analytic or Anglo-American tradition) subscribe to naturalism, the position that 'reality' is exhausted by nature, containing nothing 'supernatural,' and that the scientific method should be used to investigate all areas of reality, including the 'human spirit'.[12]

He is not wrong. But what he means by 'naturalism' is basically materialism, since as many of his writings make clear (I discuss Pinker in Chapter 5), he would count any philosophical view of reality with a non-physical component, such as idealism or dualism, as committed to the supernatural. So, what we see here is some reassurance being offered to readers: 'don't worry about philosophy because it is respectably materialist these days.' We finally see some appreciation being shown for philosophy's turn to materialism. It is no longer poisoned by archaic, anti-scientific nonsense, because it recently made the right choice in a debate that existed in ancient Greece.

Pinker is quite the exception, however. Biologist Edward O. Wilson, despite being very positive about the humanities in general, has this to say about philosophy:

> I like to say that most of philosophy, which is a declining and highly endangered academic species, incidentally, consists of failed models of how the brain works.[13]

He said this while trying to justify his own parallel move to that of Krauss, namely to show that science can solve a traditional philosophical problem, this time the meaning of life.[14] The statement itself is very odd, however. Since models of how the brain works have not loomed large in the history of philosophy,

what he must mean is that when philosophers thought they were theorising about reality, knowledge and morality, for example, they were really, unwittingly, trying to understand the workings of human brains and getting it wrong. Brains are part of reality, however. So, if you need to know about the workings of brains to know about reality, then you must need to know about the workings before you can find out about those workings, which is impossible.

Richard Dawkins says that, 'At its best, philosophy can aid understanding. At its worst, its jargon supplies a handy toolkit for charlatans to bamboozle the innocent'.[15] That is fair comment, but it should be added that dressing up philosophical opinion as scientific fact provides a particularly powerful toolkit for bamboozling the innocent at present. But even Dawkins, thoroughly embroiled in philosophy as he is, has not been able to resist the urge to make a blanket denouncement:

> Philosophers' historic failure to anticipate Darwin is a severe indictment of philosophy.[16]

And yet the concept of natural selection has a history stretching back to Empedocles.[17] There were over two thousand years of philosophical anticipations, but Darwin was a biologist, so philosophers could not have been expected to anticipate his biology. They were quick to read philosophical significance into it, however, with Nietzsche being a good example.

All of the scientists mentioned above write books which make philosophical claims. Some are full to the brim with philosophy, as you might expect from titles like Wilson's *The Meaning of Human Existence*, Krauss's *A Universe from Nothing*, Hawking and Mlodinow's *The Grand Design* and Dawkins' *The God Delusion*. This makes their denouncements of philosophy particularly puzzling. Academic philosophy has never been more materialist, and this builds deference to science into the discipline in a manner not encountered in other areas of the humanities. Similar philosophical commitments are widespread outside the academy, except where religious beliefs prevent them. So, the atmosphere has never been more conducive to reading philosophical

significance into scientific knowledge, which seems to be exactly what these scientists want to do. And yet they denounce philosophy and, presumably, do not think they are making philosophical statements.

What we are seeing, I think, is the influence of the materialist philosophy. It only became established in the English-speaking world in the middle of the twentieth century and has now reached maturity. The present generation of public scientists have thoroughly absorbed it, just like the rest of us, and it says that science is the best route to truth. So as scientists, they have been encouraged to feel they are the only ones with a right to talk about philosophy. This provides a personal motivation for their attacks on the non-scientist philosophers, who, while they still exist, pose a disconcerting threat to their freedom in this regard. But I think it goes deeper than that.

The deeper explanation is that to acknowledge that there is a legitimate area of concern called 'philosophy' gets too close for comfort to recognising that their materialist convictions are philosophical. For if materialism is a philosophical view, and it might be a false one, then there might be philosophical questions about reality which science cannot address – big ones, like why the universe exists or the meaning of life. A wholesale denouncement of philosophy removes any potential for having your materialist convictions challenged. So, I think the scientists most inclined to denounce philosophy are those with the deepest, most uncritical love of it – but only philosophy of one particular kind. Since materialism is not science, the thought of philosophy disturbs them. When they denounce philosophy, they yield to the demands of their own.

The reason I do not take these denouncements lightly, as many might think I should, is that they seem to me symptomatic of a wider situation in which philosophical reflection is coming to seem less and less important, while the power of science and technology to change the basic conditions of human life are rapidly increasing. I think this is a bad combination, because as more technological transformations of the conditions in which people live their lives become possible, the more we should be philosophically reflecting on which of the transformations we

want to enact. The more we *can* do, the more we should reflect on what we *want* to do – where the 'we' who should reflect is 'as many people as possible'. It seems to me that materialist philosophy actively discourages the kind of widespread philosophical development we need in order to keep pace with technological development and thereby allow it to improve our lives in a rationally constrained and popularly mandated framework. I also think materialism is false, which is an excellent traditional reason for not believing something and thereby allowing it to alter your behaviour.

Hawking said 'philosophy is dead', but look at the kind of concerns he expressed in *A Brief History of Time*, when connecting Darwin's theory of evolution with the quest for a single, unified theory in physics:

> It has certainly been true in the past that what we call intelligence and scientific discovery have conveyed a survival advantage. It is not so clear that this is still the case: our scientific discoveries may well destroy us all, and even if they don't, a complete unified theory may not make much difference to our chances of survival. However, provided the universe has evolved in a regular way, we might expect that the reasoning abilities that natural selection has given us would be valid also in our search for a complete unified theory, and so would not lead us to the wrong conclusions. Because the partial theories that we already have are sufficient to make accurate predictions in all but the most extreme situations, the search for the ultimate theory of the universe seems difficult to justify on practical grounds. (It is worth noting, though, that similar arguments could have been used against both relativity and quantum mechanics, and these theories have given us both nuclear energy and the microelectronics revolution!) The discovery of a complete unified theory, therefore, may not aid the survival of our species. It may not even affect our lifestyle. But ever since the dawn of civilization, people have not been content to see events as unconnected and inexplicable. They have craved an understanding of the underlying order in the world. Today we

> still yearn to know why we are here and where we came from. Humanity's deepest desire for knowledge is justification enough for our continuing quest. And our goal is nothing less than a complete description of the universe we live in.[18]

He says 'our scientific discoveries may well destroy us all'. Like the rest of us, it does not keep me up at night; news about nuclear proliferation occasionally invades your consciousness then floats away again – most of us have never known any different. But there is clearly an important debate to be had about whether we actually want physicists to press on towards their final theory, if doomsday is the risk involved. All that craving to understand which he talks about might well be considered a very minor factor to consider if a debate were to transpire among all the relevant stakeholders. Perhaps the yearning is more philosophical than scientific. Perhaps the latter is largely confined to the scientists doing the research, and most people, unable to understand it properly anyway, only really care about the technological consequences and how they change their lives. Would they be wrong to think that? Would asking for some restraint show that people do not know what is good for them, or are showing insufficient gratitude to science?

The great jazz saxophonist Sonny Rollins has said:

> Everything about technology, folks, is not good. Hate to tell you, folks, but it's not all good.[19]

The way he says it ('Hate to tell you, folks') is a reminder that these days, it needs to be said again, and again, and again. Natural positivity and optimism about life, combined with one-sided views tirelessly promoted by those with vested interests, make it all too easy to forget. The occasion for Rollins' comment was provided by a spoof article purporting to be a confessional piece he had written, which was widely circulated on the internet (it 'went viral'). The article portrayed him as someone who hates jazz and believes himself to have 'wasted [his] life' – infantile, but no big deal. But deep down we all know that internet technology is 'not all good' and that this is sometimes a really big deal. We know this

because it changed our lives and we know what our lives are like now. Hours spent trying to get your computer working again are not good hours; an inbox full of hundreds of emails will rarely make your spirits soar; attempts to trick you popping up onto your screen are annoying; worrying about an illustrated encyclopaedia of depravity and malice at the end of your children's fingertips is a problem we never used to have. Quite possibly it made things better than they were before, although I remember no beautiful emergence from a cocoon during those years when I, like the rest of my generation, started using the internet. There was certainly no widespread, all-consuming debate about whether we should transform our lives in the widespread, all-consuming way we have. Now far greater transformations are envisaged, and they are engineering projects, not propositions to consider. A more balanced, rational and pro-active attitude to technology needs to develop among its consumers, and a more balanced and rational attitude needs to develop among its producers.

This is a standard theme in the philosophy of technology. Hans Jonas advocated a new, more consensual ethics developing around technological development, and many others have followed suit.[20] But philosophy of technology remains a minor area within the wider academic discipline. Langdon Winner felt justified in saying, back in 1986, that 'the most accurate observation to be made about the philosophy of technology is that there really isn't one'.[21] Whatever truth there was in that – it depends on his view that there was 'little of enduring substance' in the thousands of books and articles he surveyed – things are changing. Increasing numbers of philosophers now put their minds to the question Jonas and Winner prioritized, namely how to establish limits in a world in which science and technology are continually expanding the scope of what it is possible for us to do. To make these efforts practical requires being adequately informed about the working practices involved in technological development, as well as the funding decisions that get them started, and much collaboration now takes place with the interdisciplinary field of Technology and Science Studies.[22] A discipline of Engineering Ethics has been established (Langdon found such considerations to be completely

alien to engineers in 1986[23]), as well as Computer Ethics, Nanoethics, and various other subdisciplines devoted to specific developing technologies. There is a *Centre for the Study of Existential Risk* at Cambridge University, co-founded by a philosopher (Huw Price), an engineer (Jaan Tallinn) and a scientist (Martin Rees), as well as philosopher Nick Bostrom's *Future of Humanity Institute* at Oxford University.

Such developments are to be welcomed without reservation, but they face a very serious uphill struggle. As a member of the public, one who actively listens out for this kind of thing, I have noticed no sign of widespread, all-consuming debates starting to materialize over the particularly dramatic new technologies currently envisaged. When I hear politicians mention artificial intelligence, they are talking about the economic benefits which they promise not to allow my country to miss out on. When I hear about major developments to neural implantation technology, this is because it holds out the prospect of curing Parkinson's Disease – an exceptionally powerful pro, now what about the cons? Concerns are always dismissed, typically seen as a source of amusement or sign of ignorance; details and arguments are always absent. I do not feel I am giving informed consent to developments that will fundamentally alter the future of human life, and I very much doubt that this is because I am a philosopher, rather than an airline pilot, nurse, architect or builder. It seems to me that something very dramatic is going to have to change before this process of radical change can be considered remotely democratic.

I am not silly enough to think that academic philosophy will lead the way. Plato tried some direct action and regretted it on his return from Syracuse. Academic philosophy exerts its influence more indirectly, as vague contours of new ways of thinking gradually catch on to alter behaviour in the long run. What I do think, however, is that 'philosophy' in a more general sense, one which explains why there is an academic discipline, is something that could spread far beyond the academy to make a decisive difference to how human beings develop in a technological world. It is well-placed to do that because it is neither science nor religion, but can rationally reflect on both. I defended this conception of philosophy in my previous book, and I also

published a paper defending it in the appropriate academic journal. It is a task very few philosophers undertake. My leading thought was that there must be some kind of subject-matter which explains why there should be a discipline which encompasses fields as seemingly diverse as metaphysics and ethics. No criticism of my conception of philosophy has ever been made, to my knowledge, so I feel justified in proceeding to work with it, as I shall do in this book. In a nutshell, it is that, 'Philosophy is the study of a range of related issues concerning knowledge, reality, and moral conduct, which traditionally centre on the question of life's meaning'; my use of the word conforms to that conception throughout.[24]

I think materialism is the main philosophical obstacle to philosophy (in my generalist sense) becoming a more widespread, self-conscious preoccupation which might benefit our approach to technological development. Materialism not only blurs the boundaries between science and philosophy, but works to actively discourage the notion of philosophy as a distinct field of interest. It also encourages apathy, in that it is liable to stand against an image of people as conscious free agents who determine their own future by independently thinking through the available options to try to make rational decisions in light of the truth. Materialism has this in common with another major current of twentieth century thinking to which it is instinctively opposed, namely the counter-Enlightenment currents of de-centring thought associated with the likes of Freud, Durkheim, Barthes and Derrida.[25] Materialism is similarly attracted to a picture of us as powerless pawns in a game played by nobody. Philosophy, however, is an assertion of rational autonomy, even when that autonomy is being used to deny itself. And for philosophy to spread, I think, it must draw on the best resources at its disposal, namely the natural interest of the traditional problems of philosophy, which need to be shown as relevant to the problems we face today.

As such, I shall be arguing against materialism, suggesting an alternative, and talking about some traditional problems in light of our contemporary situation. This book is not a specialized monograph on the philosophy of technology, just as my previous

book, *Philosophy in a Meaningless Life*, was not a specialized monograph on the meaning of life. Once again, I aim to show the continuing relevance of the traditional problems of philosophy to matters outside the academy, while arguing for particular views on them within it, albeit in a manner that might be understood from without – attempting this balancing act is what my conception of philosophy, and of its value, requires. This time technology is my theme, and the more specific traditional problems are materialism and idealism, freedom, personal identity and truth.

How these topics fit into the overall argument of the book can be understood as follows. Materialist philosophy has exerted major historical influence over how we think about ourselves and our collective future. As the largely un-reflected belief-system it has now become, it continues to shape the directions of our technological development, while encouraging us to think these directions are inevitable, that we have no freedom to do anything about it, that seeking truth is a specialist pursuit, and that our very identities are within the scope of technological development; that humanity itself is within that scope, in fact, and might even be worth replacing. Materialism has never been a rationally established philosophy, however, and for most of its history was embraced as a political agenda opposed to organized religion, with the technological advances of the twentieth century falsely seeming to vindicate it. Now it obstructs the kind of widespread public reflection which might break the current deadlock between resigned pessimism and blinkered optimism over the development of radical new technologies. In the poetry of Lucretius, which conveyed materialism from the ancient world to the modern, the myth of the war between gods and titans was interpreted in favour of materialism: in defiance of the gods, materialist philosophy sought technological aid from the titans to improve the human lot. But seeking this aid may result in horror, as we are reminded by Mary Shelley's novel *Frankenstein*, subtitled *The Modern Prometheus*. If technological development is to be driven by collective, rational debate, and the deadlock between pessimism and optimism broken, then we must find balance between gods and titans: between imagination and rational deliberation, and the power to enact our visions. I shall argue that a new, idealist philosophical

understanding of ourselves, one which expands rather than challenges everyday understanding, encourages individual reflection, reasserts our freedom, and reflects the kind of lives we now live, would help us to find that balance.

I do not think that the materialist philosophy is an appropriate form of gratitude for Prometheus's gift. The appropriate gratitude is shown through the superlative status in modern life of scientists and inventors, alive and dead. Anyone inclined to doubt whether that status is appropriate, with their central heating, electric lights and flush toilets, smartphone in pocket and hospital within short driving distance, could do worse than to reflect on the doctor, philosopher and scientist Raymond Tallis's memorable question: 'How much of the history of human consciousness is a history of itching?'[26] Nevertheless, in the current intellectual climate, the argument of this book is liable to bring accusations of being anti-science, anti-technology, or just generally anti-modern life. I am not sure it will help to say that I am none of these things; in my previous book, it was not altogether effective that I immediately and completely disassociated pessimism from my view that life is meaningless. But, for the record, I certainly do think that science tells us the truth about our physical environment; I just think such statements are open to competing philosophical interpretations, and that the interpretations are important. I am glad to have been born into an age of high technology and look forward to further developments within my lifetime, such as green technologies. I do not look wistfully back to a supposedly better bygone age; I think I would have been one of the peasants.

So, with the preliminaries over, let me tell you what will now follow. In Chapter 1, I will try to imagine what a world without philosophy might look like, before introducing the gods and titans myth, and what I shall call the 'problem of ceaseless technological advance'. In chapters 2 and 3, I will portray materialist philosophy, as well as philosophy itself to some extent, in a hopefully enlightening manner; simply the facts I will recount might be enough to have something of this effect. In Chapter 4, I will argue for an idealist philosophy which could replace it. Idealism has acquired a thoroughly bad name during the materialist era, as has metaphysics itself, but I think the version I defend fits in well with

how we ordinarily think, as well as with those things we know – and know we do not know – which are most relevant to metaphysical assessment. In Chapter 5 I look at the deadlock between pessimism and optimism we currently face over concerns about technological development, and propose philosophical education as a way of breaking out of it. In Chapter 6, I argue that we are free, and explain how materialism and superstition have combined to create the false impression that this is impossible. In Chapter 7 I argue that – in a manner that requires some explanation given the contemporary connotations of the word – it makes sense to think of ourselves as souls. This understanding is forward-looking, not backward-looking, as I illustrate with a discussion of video games. Then I finish up in Chapter 8 with a reflection on the importance of truth, which too many powerful people seem to be forgetting about these days. This chapter includes a sketch of a utopia, with the final and very short section explaining its significance within the argument of the book.

1

A World Without Philosophy

§1. Imagining the world without philosophy

Without philosophy we would not be where we are now. In a trivial sense this is obvious, for we would not be where we are without tennis either, although there would be other games to build lives around. But without philosophy we might still be running with the animals. Natural philosophical curiosity about the ultimate nature of reality led to the cataloguing of fundamental elements and forces. It led to science. Perhaps the desire to master observable regularities could have taken us down that road in some other way, but speculation about what lay behind those regularities was the philosophical impulse which actually delivered. Similarly, curiosity about the meaning of life led us to the supernatural realm of religion. It is hard to imagine ritual practices developing without the gods they were meant to appease, and those gods were another explanatory principle arising from philosophical curiosity; another ultimate reality to stand behind the commonplace. Without religion, which is always philosophical at heart, we would have not been inspired, united and divided in the ways which led to our civilizations. We might not have had art, given that other animals do not and its earliest extant forms evidence religious inspiration. Could we have arrived somewhere like this without philosophy? Nobody knows. But it was philosophy that sought to draw a line between us and the other animals, and looking about us now, it seems to have succeeded.

Many would be prepared to celebrate the philosophical instinct, broadly construed, as an ancient impetus to all we were

subsequently to achieve. But whatever might be thought about philosophy's historical role in the emergence of science and religion, both of these are clearly integral to our current situation. Without science and the technology it facilitates, and vice versa, we would be unceremoniously returned to the Stone Age. And if religious faith were to suddenly collapse among the large and growing majority of the world's population who have it, we have no idea what chaos might ensue; even militant atheists surely envisage a very gradual transition. It is hard to imagine our world without science and religion, then. But what would it be like without philosophy? Denouncements of philosophy have reached a crescendo in recent times, so let us try to imagine the situation being hoped for.

Universities would have one less kind of degree to offer, but would soon make up the numbers elsewhere. Academic philosophers would be out of a job, but they might be able to reapply their skills to science, mathematics, literature or history. The educated public would have one less field of interest to engage them, so lightly worn copies of *Thus Spoke Zarathustra* would have to part company from *The Picture of Dorian Gray*, *The God Delusion* and travel guides on casually erudite bookshelves.

But on second thoughts, universities would now have to be very careful what they were teaching, since philosophy has spread widely across the humanities and social sciences; anything written before the ban might be infected to some degree. Even natural scientists might sometimes feel the inclination to wax philosophical during the course of a one-hour lecture, so that would have to be curbed. And as for those casually erudite bookshelves, only the travel guides would really be safe. We might be able to save *Dorian Gray*, if it could be reworked to make it more boring, but not *The God Delusion*. There would have to be a widespread decimation of the popular science idiom which has filled a void left by religions and their philosophies in many people's lives. They usually contain plenty of philosophical speculation worked around reports from the scientific frontiers, since there is philosophical interest in alternative realities, the origins of the universe, human nature, eternal life, and so on. Perhaps we would travel more in a philosophy-free world, thereby

broadening our minds in this other tried-and-tested fashion.

This may all be considered inconsequential on the grounds that philosophy is entertainment. We might be squeamish about tampering with great works of literature, theatre, film, music, poetry, paintings, conceptual art, etc., but you could hardly leave it intact in a world free of philosophy, lest it inspire the wrong thoughts. But since philosophy has no clear connection to what gets food on the table, and the extensive redactions to Shakespeare would no doubt be done expertly, let us reserve judgement for now and turn to something more practical.[1]

Politics is underpinned by philosophical commitment. Left- and right-wing politicians have different views about how society should be organized, in line with how they think we ought to live. In the background of their debates are left- or right-wing academics who use evidence to support action-plans for implementation. But motivating such plans are philosophical views, such as that states should try to maximise happiness, not interfere with individual liberties, and so on. These views emerged from reflection on what we should all desire. This is a paradigmatically philosophical notion because it alludes to a meaning of life, despite the fact that only the religious might instinctively make the connection nowadays. But the connection is there, because nothing could better secure the 'should' of *what we should all desire*, than the 'is' of a meaningful reality in which we have our place, such that we should all desire something because the nature of reality dictates that we should bring it about; just as the nature of reality dictates that the apple fall from the tree. Thoughts about what we should all desire become less philosophical, and more practical, when the scope of the 'should' reduces to 'should in order to bring about such and such results'. And less philosophical still when the 'we' reduces to 'we people of this nation' or 'we workers'. But given the root of all such thoughts, they remain very philosophical.

If philosophy were to go then politicians could no longer lay claim to deep commitments. But you might think this would be no bad thing on the grounds that real political action happens in debates about implementation. Still, it is hard to imagine political life without some kind of ideological split. We cannot reduce it to

disagreements about implementation plans without deciding what we want to implement, but we can hardly agree on how we should live without engaging in exactly the kind of philosophical debate we are trying to eradicate.

Two possibilities suggest themselves. The softer one would be to leave the politicians with their desires for different outcomes, and eradicate reflection on the reasonableness of such desires. Politicians would desire what they desire now, draw up implementation strategies, and in democracies, the people would decide which strategies they desired. 'Wrong' would mean 'not part of the world which I, as a matter of brute fact, desire'. This is a compromise, however, because we would be leaving past philosophy embedded to be passed down the generations. The harder option would be to eradicate conflicting desires. The problem then arises of what we are trying to achieve, but perhaps neuroscience could settle the matter by looking inside our brains. They are physical things which evolved in similar circumstances, so it seems reasonable to suppose there is something they all want; maybe this has already been discovered.[2] Or maybe it is simply obvious that we all want food, shelter, security, happiness and eternally youthful life. Perhaps alternative desires are maladies to be treated, or are not really alternatives at all, because their neural reality is a convoluted desire for happiness. Perhaps we would not need politics at all once philosophy was gone. For surely intelligent machines would be better at working out the best implementation strategies for our utopia than the inevitably flawed, biologically implemented cognitive systems we are presently stuck with. Or we could genetically enhance politicians; perhaps we would only need one if the enhancement was good enough.

Another area of life that would be impacted is religion. Religious belief places the ordinary world we experience into a wider context of meaning, and typically holds that it is governed by something greater than, and concerned with, us. That is a very philosophical thing to believe, although the way it is often believed, namely as an unquestioned background belief, is not at all philosophical. In any case, since religious beliefs about gods imply philosophical views about reality, they would have to go. People could continue to engage in rituals and ways of life: they

could enjoy the sense of community, calmly reflect in the meditative spaces of Christian churches and clap in front of Shinto shrines. But without the cultural institutions of belief, it would not be sustainable. Religion would expire with philosophy. Some will think we have now reached the most appealing aspect of this proposal.

But none of this is feasible. For even if we were able to eradicate philosophy from the world, leaving us with redacted Shakespeare, politics entirely concerned with implementation, and no religious faith, the philosophy would come right back at us – like a boomerang. Somebody would die, and stricken by grief, their loved ones would form the consoling thought that they intangibly lived on. A child would ask where the universe came from and talk of a Big Bang would simply push the question back a stage. An office worker, bored at her desk, would wonder what the point of it all was. A teenager would take psychoactive drugs and start thinking about consciousness. A scientist would wonder why her theory was so predictively successful. Questions would be raised about our political utopias and new ones would be dreamt up, better tailored to the ever-new living conditions we use technology to create. So, the proposal is not stable.

It seems it could only be made stable if, while making these changes, we also changed ourselves: by removing a philosophy gene or two. This is because we are philosophical beings. We *all* are, despite the fact that our philosophical natures are often suppressed before they can develop. We see this from how readily philosophical issues concern us when the social framework in which we live our lives is violently interrupted. And there is no more violent interruption than death; whether that of a loved one integral to your projects, or the imminent prospect of your own death placing you face to face with the termination of projects without which you do not know yourself. At these times people seek religious consolation, or otherwise engage in philosophical reflection. Since it is unrealistic to expect these instincts to ever be educated out of us, it is looking very much as if the eradication of philosophy is going to require neural alteration.

Now this all sounds very unattractive, of course, but the point of this exercise was obviously not to dissuade us from a concrete plan

of action. Anti-philosophical sentiment is on the rise, and trying to follow through on that agenda has revealed its enormity. What we have seen is that philosophy is by no means confined to academic institutions, that losing this component of our lives is far from an obviously attractive prospect, and that there is no way we could enact the agenda in any case, short of plunging into a technological dystopia. Anti-philosophical sentiment is a real and increasingly significant phenomenon, which we have learnt to take lightly, but should not. This sentiment may be blind to its own direction of travel, but we should not be.

In the real world, of course, those who denounce philosophy do not envisage a programme of eradication. If the denouncement is thoughtful enough to envisage anything at all, which is rare, then it is for philosophy to naturally fade from our horizons; although it is worth remembering that the eradication of religion from nation states has indeed been attempted by materialist ideologues. The scientists who denounce philosophy simply assume that science has all the answers, and are irritated by the existence of a discipline in which that could possibly be questioned – because of their commitment to materialist philosophy, as I said in the introduction. But philosophers who call for an end to philosophy – a real creed, which is something that has always intrigued me – think the matter through rather more carefully.

It was the nineteenth century positivist philosophy of Auguste Comte which provided the intellectual beginnings of the current anti-philosophy trend. Comte saw philosophy as a transitional stage on the road to science; as something the demise of which signals progress.[3] But it was Richard Rorty, in the late twentieth century, who developed the theme most thoroughly. Rorty immersed his life in philosophy to an extent few can ever have equalled and he would never have issued an unqualified call for the end of philosophy. He did, however, issue many qualified ones – because, in spite of his lifelong opposition to positivism in all its forms, he accepted the essentially positivist view that philosophy holds back human progress.[4] He tried to resolve this tension by proposing that philosophy be privatized. It became, for him, an inner, personal poetry, which insulated the intellectual

elite by allowing them to gaze at the world in detached irony.[5] The irony, and hence philosophy, was never to be allowed into the public sphere, where it was the elite's moral duty to defend their views as vigorously as the non-ironic; as if the truth was on their side – which as the ironist realises, it never could be. In this vein, Rorty defended materialist 'truths': that everything is physical, that the mind does not exist (he pioneered this view), and so on. He would have been horrified at the prospect of extracting philosophy from literature and art, since that is exactly where he wanted it to be. The problem with philosophy, he thought, occurs only when people bring it into the public domain – when they think it raises real issues worthy of our collective attention.

Perhaps this provides a more realistic proposal to consider, then. Privatization might amount to much the same thing as eradication in the long-run, since philosophy makes claims about reality, and the interest of such claims depends on our ability to take them seriously; a supposedly true story loses much of its interest when you find out it never happened. Nevertheless, within a world of privatized philosophy, big philosophical ideas might still survive in our memories, cherished for their poetic content. Philosophy might live on as a shadow of its former self. I think Rorty thought it would be better that way.

Perhaps it could work to some extent. Perhaps people could learn to keep all but materialist philosophy to themselves. Books like Dawkins' *The Magic of Reality: How we know what's really true*, could be developed for even younger readers, such that the only philosophy we grew up with was trust in science.[6] A culture could develop in which whenever people found themselves raising philosophical questions in private, they knew better than to take them seriously, and so publicly confined themselves to demonstrable scientific truth. Religions could continue, but would keep out of the public domain – which is something Rorty was particularly keen on.[7] Visions of competing utopias might continue to animate political life, but nobody would feel the need to justify them with reasoned argument anymore, so long as there were more useful routes available to the same outcome. Philosophy would not have been eliminated, but rendered safe. Safe for what?

Science provides the root motivation for the anti-philosophy agenda. The motivation is that philosophy has been superseded by science, or soon will be. Apart from this essentially positivist motivation, which gets dressed up in a variety of ways, the only other consideration you regularly hear – which initially seems like an independent point, but is really just more of the same – is that philosophy never makes progress. (I shall explain why that is the wrong way to look at philosophy in the next chapter). This is just more of the same, because the intended contrast is with science. Thus, the conclusion we are meant to draw is that in a world of advanced science, philosophy is obsolete and counterproductive; unscientific, in short.

And yet if philosophy were to quit the public arena, developments in science would be divested of any wider rationality. Scientists would discover whatever they *could* discover, whether or not these discoveries were, on reflection, desirable. Philosophical views on how we want human life to develop and what we want to preserve of what we currently have would be absent. If even the scientists were not thinking these things through, the frontier of science would become a directionless lunge into the unknown. When the prospects of a radical technological transformation of our lives became imminent, people would worry, of course, but they would not question its inevitability. They might draw up contingency plans, but autonomous and unstoppable, science would move on regardless.

This is a concerning vision given that extremely recently, relative to the history of our species, science has unlocked awesome, unprecedented power which has brought us to the brink of total destruction on at least one occasion (the 1962 Cuban Missile Crisis), and which has proved incredibly difficult for our politicians to control ever since. Scientific knowledge is developing at an exponential rate, as scientists continually tell us, and the most vaunted breakthroughs on our horizon concern artificial intelligence, biotechnological manipulation of human beings, and more insight into the subatomic (e.g. 'The God Particle'); all areas which attract widespread public alarm because of their apparent dangers. On the face of it, philosophical reflection on what we want from science and where we can safely take it is now needed

more than it has ever been. The notion of science as a disinterested quest for truth is immediately put into question by the very nature of the above-mentioned projects.

This looks like a definitive reason for keeping philosophy in our world. But we have now left the realms of the imagination. For when it comes to scientific and technological development, we no longer need to imagine a world without philosophy – we live in one. Philosophy is dead; or, more accurately, I think, philosophical reflection is dead because one philosophy is so deeply embedded. Perhaps it never lived in that sense, but it needs to now, at a time when the latest wave of scientific breakthroughs is feared but regarded as inevitable. It is as if they were giant asteroids on a long-term collision course with the Earth, rather than the imminent goals of ordinary people who brush their teeth before heading off to work in the morning. Some hope for a positive outcome, that the asteroids will change course. Others think they are not asteroids but manna from heaven, and they scorn contemplation of the alternative. And all the while the scientists and technologists labour away, racing to be part of the team that will fundamentally change human life in a yet to be determined manner. It is not for nothing that 'racing' has become the standard word to use in this context. Trying to find ways to safely manage and mitigate the negative effects of technologies regarded as an inevitable part of our future is the thoroughly unphilosophical order of our day.

§2. Gods and Titans

In Greek mythology, the Titanomachy is the war that took place between gods and titans. The gods won. With victory secured, they imprisoned most of the titans deep beneath the earth. The only exceptions were Atlas, the titan's war leader, who was reserved the special punishment of carrying the sky on his shoulders for all eternity, and the brothers Prometheus and Epimetheus, who had fought on the side of the gods. All the rest were imprisoned in Tartarus, and as Hesiod makes clear, the gods made every effort to

ensure they would never escape:

> they sent them under
> The wide-pathed earth and bound them with cruel bonds–
> Having beaten them down despite their daring–
> As far under earth as the sky is above[8]

Hesiod adds that from their 'moldering place' of imprisonment, there is 'no way out for them. Poseidon set doors [o]f bronze in a wall that surrounds it.' Zeus also posted the monstrous Hecatonchires on guard-duty – just to be sure.

This was not the end of the troubles the titans were to cause the gods, however. For after emerging unscathed from the Titanomachy, Prometheus, the cleverest titan and the benefactor of humanity, tricked Zeus into accepting the fat and bones of animal sacrifice, leaving the most nourishing part for humans to eat. Zeus punished Prometheus by withholding fire from humans. Prometheus stole it and gave it to us. Zeus was furious, so he had the beguiling Pandora sent to Epimetheus as a gift, knowing she would wreak havoc among humans. Having been forewarned by his brother, however, Epimetheus declined. This was the final straw for Zeus, who ordered Prometheus to be chained to a pillar in the mountains where an eagle would gnaw at his liver all day, only for it to grow back during the night, ready for his next day of agony. Epimetheus now accepted Pandora, who opened her eponymous 'box' and thereby released all manner of evils upon humanity.[9]

More fallout from the Titanomachy was later to emerge in the form of the Gigantomachy: an uprising of giants against the gods, which was so similar to the first uprising that they have been conflated throughout our history.[10] According to Claudian, the second occurred because 'mother Earth [Gaia], jealous of the heavenly kingdoms and in pity for the ceaseless woes of the Titans [her children], filled all Tartarus with a monster brood'.[11] These monstrous giants then burst forth from the earth to challenge the gods for supremacy. Once more the gods emerged victorious, and once more they buried the vanquished deep beneath the earth.

In the *Sophist*, Plato compares the Gigantomachy to the

philosophical dispute between materialists (a.k.a. physicalists[12]) and idealists:

> **Stranger** What we shall see is something like a battle of gods and giants going on between them over their quarrel about reality.
>
> **Theaetetus** How so?
>
> **Stranger** One party is trying to drag everything down to earth out of heaven and the unseen, literally grasping rocks and trees in their hands, for they lay hold upon every stock and stone and strenuously affirm that real existence belongs only to that which can be handled and offers resistance to the touch. They define reality as the same thing as body, and as soon as one of the opposite party asserts that anything without a body is real, they are utterly contemptuous and will not listen to another word.
>
> **Theaetetus** The people you describe are certainly a formidable crew. I have met quite a number of them before now.
>
> **Stranger** Yes, and accordingly their adversaries are very wary in defending their position somewhere in the heights of the unseen, maintaining with all their force that true reality consists in certain intelligible and bodiless forms. In the clash of argument they shatter and pulverize those bodies which their opponents wield, and what those others allege to be true reality they call, not true being, but a sort of moving process of becoming. On this issue an interminable battle is always going on between the two camps.[13]

Plato sided with the gods / idealists in this 'interminable battle', but it was not long before materialists reinterpreted the analogy in their own favour. The Roman philosopher Lucretius made the decisive move in this passage:

> I'll show you many things that will allay

> means of transforming the conditions of life. Even such established arts as were adapted to keeping society in repair – professions like those of the architect and the medical doctor – were on the edge of respectability. They approached it only to the extent to which the practitioner could be regarded as the possessor of purely theoretical knowledge by which he directed the labour of others.[19]

So, the gods remained firmly in charge in ancient times, with their preference for theoretical knowledge over practical applications informing prevailing attitudes. Farrington illustrates ancient science's 'retreat from its function as man's weapon in the fight against nature', with some quaint examples of science being used to perform religious 'miracles'. For instance, worshippers who burnt their offerings on a specially designed alter could witness an icon of their deity burst forward to salute them – through the application of some of Strato's principles of pneumatics – while newlyweds could marvel at an iron Mars and loadstone Venus magically coming together in passionate embrace. The magic of science remained a novelty in the gods' world.[20]

The reason things did not stay like that is because we learnt to harness the 'magic of reality', as Dawkins aptly puts it in the title of his book for children which I mentioned earlier. The word 'magic' originates from the arts of the Zoroastrian *magi* (astrology, healing, etc.), which were held in suspicion by the Greeks. The Christians transferred the sinister connotations to Greek and Roman *technē*, on the grounds that it invoked pagan gods, who were really demons.[21] But by the time of medieval Europe, attitudes were softening, with a distinction now being drawn between 'natural' and 'demonic' magic. As Richard Kieckhefer explains:

> Natural magic was not distinct from science, but rather a branch of science. It was the science that dealt with 'occult virtues' (or hidden powers) within nature. Demonic magic was not distinct from religion, but rather a perversion of religion. It was religion that turned away from God and towards demons for their help in human affairs.[22]

Nevertheless, the term 'magic' was still often reserved for the demonic kind, even by philosophers who recognised the existence of natural 'occult virtues', such as Aquinas. The notion of natural magic gained more widespread acceptance among intellectuals in the fourteenth and fifteenth centuries, but even then, many continued to harbour a deep suspicion.[23]

The medieval distinction between occult and ordinary powers was sometimes, as Kieckhefer puts it, 'subjective', such that 'a power in nature that is little known and inspires awe is occult'. There was also a more objective sense, according to which occult powers were not internal to their bearers, but rather derived from the external source of emanations from stars and planets.[24] The objective sense turned out to be based on a false hypothesis. But if we understand natural magic as the science of occult powers in the subjective sense, it has never left us. Science today harnesses powers in nature that are 'little known', except to an expert community; and even there, the knowledge is fragmented between specialisms and specialists, and increasingly dependent upon machines. These powers inspire 'awe' and facilitate technologies which structure our lives. Thus, we push a button to store our digital photographs in a 'cloud', without knowing what a 'cloud' is. Our attention is focused on our goals, with the technology that delivers, moulds and frequently creates these goals remaining invisible; conspicuous in its awesomeness on first arrival, but not for long.[25]

Now we reserve the word 'magic' only for the fantasy of powers which science *cannot* explain; a fantasy which is fading fast, since we now tend to think the wizard's spell must, within its fictional world, have some scientific explanation. This transformative process began in earnest in the seventeenth century, at the beginning of which Francis Bacon made his highly influential case that philosophy must abandon its traditional, contemplative role in favour of a hands-on, practical approach. This was, in effect, a successful manifesto for science to eclipse philosophy.

Bacon's concern was with steady, incremental progress, bringing results which would change the world for our benefit. His disdain for philosophy's failure to achieve this survives unchanged

in the anti-philosophy agenda today. Thus he thought, 'the wisdom which we have drawn in particular from the Greeks seems to be a kind of childish stage of science, and to have the child's characteristic of being all too ready to talk, but too weak and immature to produce anything. It is fertile in controversies, and feeble in results.' The studies he proselytised for aimed, 'not to defeat an opponent in argument but to conquer nature by action; and not to have nice, plausible opinions about things but sure, demonstrable knowledge'. To those sympathetic to his aims, he made the following entreaty: 'let such men (if they please), as true sons of the sciences, join with me, so that we may pass the antechambers of nature which innumerable others have trod, and eventually open up access to the inner rooms.' On accepting his invitation, we would find, 'as if awakening from a deep sleep, what is the difference between the opinions and fictions of the mind and a true and practical philosophy, and just what it is to consult nature herself about nature.'[26]

Bacon wanted to 'revive and reintegrate the misapplied and abused name of Natural Magic, which in the true sense is but Natural Wisdom, or Natural Prudence', finding in the word an 'ancient and honourable meaning' as 'the science which applies the knowledge of hidden forms to the production of wonderful operations'.[27] The extent to which Bacon, and the scientific revolution in general, was influenced by the occultist magical tradition represented by the likes of Cornelius Agrippa and Paracelsus is a subject of some debate; Bacon singled them out for vehement criticism, but shared their passion for making knowledge practical, observation-based and results-orientated.[28] However, in the sense of 'magic' that Bacon wanted to revive, rooted in the subjective notion of 'occult virtues', the scientific revolution for which he provided the definitive intellectual justification was to spread magic throughout our world. It changed the world just as he wanted, and now changes it ceaselessly. If we so wished, we could now have awe-inspiring holograms of our deities appear on altars, but our most revered places of worship remain ancient and unmagical.

It would be a mistake to conclude that the titans have won. Not

just a mistake, but the wrong way of looking at it, one which would allow the adversarial nature of the myth to dictate the options for resolution. Magic, in Bacon's 'ancient and honourable' sense, has given us longer and happier lives, and there are now far more of us than ever before enjoying what this life has to offer. But our societies are governed by moral codes, and abstract ideas of fairness and equality have determined how we organize our societies. The gods and titans have both had a decisive role to play in our prosperity. Action and reflection are both important. The original analogy concerned reflection, since it referred to the philosophical debate between idealists and materialists. And magic is not a good argument in that debate: reason working on nature is what makes it happen, but it is not a reason itself. The frustration you see in Bacon, anticipated by Lucretius, still felt by the scientists discussed in the introduction, is that philosophical debates do not result in direct action; that philosophy is not science. But the philosophical questions remain, action cannot resolve them, and we will always need both reflection and action: both a direction and a mode of transportation.

If we allow ourselves to think the titans have won, and thereby allow an increasingly un-reflected philosophy to influence us, we may find science and technology steering our lives in a manner which individuals, when they reflect upon it, find that they do not want. The reflection may itself come to seem in vain, as I think is already happening, because it seems unscientific, and because the direction of travel seems inevitable anyway. And yet if we follow the myth through, the titans win when the gods lose control and chaos returns. It would be better to bring gods and titans into harmony.

§3. The Problem of Ceaseless Technological Advance

Human beings recently acquired the technological power to make themselves extinct within foreseeable, and hence frightening, scenarios. We might have made ourselves extinct before, in

principle, but with great difficulty, and not within any realistic scenario. Extinction through disease or other natural causes might have occurred when our population was radically lower, as it was for most of our history, and it still might. But it would not be our fault and technology would be our defence. Nuclear technology, however, has given a standard name to the humanly caused endgame, 'World War III', a name which reminds us of the exceptionally violent recent history of our species, which goes far beyond that of any of the other animals we know about.[29] And if the next world war ever comes about, we will also have biological weapons to worry about. So that is already two resources we must hope the power with its back up against the wall, or just its aging, selfish leader, would never think of using. We also have to hope that no accidents occur, and that non-state organizations never acquire these capabilities – 'never' meaning over the course of centuries, or millennia for that matter. Another kind of technologically induced endgame we have even more recently started to imagine is ecological collapse. Since this has more similarity to a natural disaster than war, technology might be our best defence here too.

Would independent observers of the human drama think it wise for us to continue gaining technological power indefinitely and with increasing rapidity? Would they advise us to go full steam ahead, in light of our history of violence, the fact that our species lives in various divided and competing power blocs, and our track-record of weaponising new scientific breakthroughs? How confident would these observers be that we will still be prospering at the end of the twenty-second century, as we press ahead to what seems to be our Star Trek fantasy of exploring the galaxy to befriend other civilizations? Personally, I think they would advise us to ease off a little, and, during a period of philosophical consolidation, try to come to some agreement about what we are trying to do. There is nothing we are supposed to be doing.

There is a 'Doomsday Clock' posted by the *Bulletin of the Atomic Scientists*, an organization set up in 1945 by the scientists who gave us the first nuclear weapons. When I last looked, we were supposedly 'two and a half minutes' away from oblivion. Scientists who develop devastating technology seem to have acquired the

and are in fact steadily decreasing; or that we need to completely change human life by abandoning modern technology to return to nature. Or you might simply not care, on the grounds that there is nothing that you, personally, can do about it. But if we are ever to do something about it, we will need to think about it. And it is here that philosophy can play a role. For to form any kind of view on how we ought to be developing our technology so as to keep the advance both ceaseless and beneficial, we first need to reflect on what we ought, rationally, to want for our future. Different ideas for how to direct the advance must be brought together in rational debate. The more people get involved, the more collective rationality and consensual status the process can acquire. Rather than anticipated technological developments continuing to seem like worrying asteroids on a collision course with our planet, they might eventually start to seem more like policies to be encouraged or discouraged through argument, as well as through voting and purchasing decisions. Rather than wondering how the advance will change things next, we might learn to see it as a continually ongoing collective moral dilemma, to which expertise and experience from all walks of life can make a contribution.

I think that materialism is the main *philosophical* obstacle we currently face to learning to see technological advance as a collective decision, rather than as the result of political and free-market forces working with whatever science happens to turn up next. From the perspective of materialism, it becomes hard to see how a problem could possibly arise with science, when science is our method for finding out how the world is. From the materialist perspective, science is a matter of human beings uncovering as many truths about reality as they possibly can, thereby providing as much material as possible for technologists and politicians to put to use in solving our problems. Knowledge is power and you need as much of it as possible to solve problems. As such, materialism encourages the problem with ceaseless technological advance. And it discourages us from thinking about it, by rendering dubious any philosophical perspective from which we might seek to stand outside of the scientific description of reality to reflect upon it and ask how we should be developing it.

If knowledge is power, then it pays to know about materialism,

and that is what the next two chapters will be concerned with. We may as well credit Democritus as its originator.[38] He was one of those audacious pioneers who aimed to work out, through abstract reasoning, the ultimate nature of reality. He reasoned that if you break things down to their smallest possible parts, then that is what everything is made of: 'atoms', he called them. Since that is what everything is made of, that is what reality ultimately is. This monumentally influential thought was titan-inspired, in that it offered us the prospect of technological power. What Democritus said made sense and still does, but it was the power we stood to gain by conceiving of reality atomistically which made his metaphysic so enduringly attractive.[39]

The gods' response to Democritus was to say: 'this, which you are breaking down into its smallest parts, this is consciousness – the immediate presence itself.' For the gods, the presence you are aware of right now is the ultimate reality – not the potential within it for gaining the power to satisfy our desires. Democritus's materialist philosophy had few followers until the seventeenth century, when its fortunes changed in the wake of the scientific revolution, then much more dramatically in the twentieth century, when the influence of religion over intellectual life declined and technological advance changed gear. Had materialism failed to catch on, science might have developed within a rationally restraining philosophical context. We might have seen that Democritus's insight was simply that reality can be treated in a broadly atomistic fashion, for the purposes of prediction and control. The notion of science as an inquiry seeking total truth, disinterested in any particular regard, might have remained alien to us. We might have seen that our ability to predict and control will not tell us how best to use that ability, and that the more our power increases, the more we need to reflect on our desires in the hope of regulating them with collective rationality. If Democritus's insight had been considered purely scientific, and not philosophical, then gods and titans might have learned to live in harmony by now. They still could.

many crimes has religion made people commit' – struck a chord with Enlightenment philosophers. Materialism was 'once more seen as having a profound moral significance'.[5]

Marx argued that it was in the hands of the *philosophes* of the French Enlightenment that materialism first started to realise its revolutionary *raison d'être*. Marxists today still see materialism as a politically charged vision. Terry Eagleton, for instance, thinks it promotes solidarity with nature and with one another, as we feel part of a reality united by materiality; he also accepts that it may encourage us to think of nature and other people as objective resources to be exploited ('materialistic' behaviour, in the popular sense), but takes this to be a capitalist abuse of the doctrine.[6] Marx certainly thought materialism was essentially political, which is a thought that never seems to cross the minds of contemporary analytic philosophers. The materialism advocated by today's analytic philosophy, however, clearly corresponds with a stage in Marx's history: the one he associates with Hobbes, in which materialism aligned itself with modern science. The key innovation at this stage was that materialism now adapted itself to the theoretical world of Galilean science: a world that can only be understood mathematically. Galileo's physical world had no colour and subsequent developments in physics purged it of anything solid.[7]

This austere vision was necessary, according to Marx, in order to beat the priests at their own game. As he puts it:

> Hobbes was the one who systematized Bacon's materialism. Sensuousness lost its bloom and became the abstract sensuousness of the geometrician. Physical motion was sacrificed to the mechanical or mathematical, geometry was proclaimed the principal science. Materialism became hostile to humanity. In order to overcome the anti-human incorporeal spirit in its own field, materialism itself was obliged to mortify its flesh and become an ascetic.[8]

Marx thinks that the view that we have non-physical souls setting us apart from the physical world was, just like the ascetic form of materialism designed to combat it, a distancing, anti-human

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