ONE

Darwin and the big questions

> It may well be that for posterity his name will stand as a turning point in the intellectual development of our western civilization ... If he was right, men will have to date from 1859 the beginning of modern thought.
>
> Will Durant (1931), p. 22

> Because all organisms have descended from a common ancestor, it is correct to say that the biosphere as a whole began to think when humanity was born. If the rest of life is the body, we are the mind.
>
> E. O. Wilson (2002), p. 132

> I simply can't stand a view limited to this earth, I feel life is so small unless it has windows into other worlds. I feel it vehemently and instinctively and with my whole being.
>
> Bertrand Russell, cited in Ray Monk (1996), p. 248

Why are we here?

Evolutionary theory answers one of the most profound and fundamental questions human beings have ever asked themselves, a question that has plagued reflective minds for as long as reflective minds have existed in the universe: why are we here? How did we come to exist on this planet? In a lot of ways, this is a very ordinary planet. It orbits an ordinary star and is part of an otherwise ordinary solar system, which is part of an ordinary

galaxy, one of billions of galaxies in the visible universe. But in another way, this planet is very strange, because a small proportion of its surface has somehow transformed itself into *life*. Even stranger, a small proportion of the life forms on the planet are conscious of their own existence, and able to comprehend – at least to some degree – the world around them. How did this happen? How did tiny fragments of the universe come to be organized in such a way that they became conscious of themselves and their little corner of the world? Why, in other words, are we here?

The answer, first revealed by the English scientist Charles Darwin, is that we are here because we evolved. Not everyone accepts this answer, though. Darwin's theory of evolution by natural selection is one of those ideas that can divide a room. On the one hand, a lot people simply love it. It excites them, captivates them, and illuminates their understanding of the world. On the other hand, there are lots of people who really, *really* hate the idea. They think it's poisonous and socially corrosive. They view the Darwinian worldview as cold and deeply disturbing; one commentator described it as 'a dogma of darkness and death'.[1] Some even believe that evolutionary theory is part of a great conspiracy, designed to steer people away from God and push them instead towards atheism. But one thing that both friends and enemies of the theory would have to agree on is that, for better or for worse, Darwin's theory is one of the most important ideas in intellectual history. In fact, a lot of people suggest that it is *the* most important idea. And one reason it's so important is that it doesn't just have implications for esoteric, academic questions – the kind of questions that are only of interest to a tiny minority of intellectuals. Unlike, say, atomic theory or relativity theory, the theory of evolution has important implications for how we view ourselves and our place in the universe. It has implications for things that are truly important to people, things that people care deeply about, things that most of us have an opinion about. Those are the things we'll explore in this book.

[1] Bryan (1925).

More specifically, we'll look at the implications of evolutionary theory for the following 'hot topics' in philosophy:

1. evolution and the existence of God;
2. evolution and the place of humankind in nature; and
3. evolution and morality (the question of what's right and what's wrong).[2]

At first glance, it might not seem that Darwin's theory – or any scientific theory, for that matter – would have implications for any topic in philosophy. Science deals with the empirical world and with matters of fact, whereas philosophy, almost by definition, deals with matters outside the remit of science. Within its domain of applicability, evolutionary theory is a striking success. But the theory does not have any obvious or immediate implications for any of the questions dealt with by philosophers. Indeed, some suggest that it has no philosophical implications at all. Some argue, for instance, that unless you're a Creationist or biblical literalist, evolutionary theory has no implications for the question of God's existence; it is compatible with atheism, certainly, but it is also compatible with theism. Others argue that evolutionary theory has no implications for questions of morality, because evolution deals with facts, whereas ethics deals with values, and you can't derive values from facts. The enigmatic Ludwig Wittgenstein summed up this general position when he noted that 'Darwin's theory has no more to do with philosophy than any other hypothesis in natural science'.[3]

Many disagree with this assessment, however, and for good reason. If nothing else, our traditional philosophical convictions look very different through the lens of evolutionary biology. As the great English philosopher Bertrand Russell wrote:

[2] Evolutionary theory also has important implications for epistemology – the philosophical analysis of knowledge – but I won't deal with that topic here. See Boulter (2007); Bradie (1986); Campbell (1974); Carruthers (1992); Hahlweg and Hooker (1989); Hull (2001); Lorenz (1941); O'Hear (1997); Plotkin (1993); Radnitzky and Bartley III (1987); Ruse (1986); Stewart-Williams (2005).

[3] Wittgenstein (1921), 4.1122.

> If man was evolved by insensible gradations from lower forms of life, a number of things became very difficult to understand. At what moment in evolution did our ancestors acquire free will? At what stage in the long journey from the amoeba did they begin to have immortal souls? When did they first become capable of the kinds of wickedness that would justify a benevolent Creator in sending them into eternal torment? Most people felt that such punishment would be hard on monkeys, in spite of their propensity for throwing coconuts at the heads of Europeans. But how about *Pithecanthropus erectus*? Was it really he who ate the apple? Or was it *Homo pekinensis*?[4]

These are awkward questions, and there are plenty more where they came from. Why would the omnipotent creator of the entire universe be so deeply attached to a bipedal, tropical ape? Why would he take on the bodily form of one of these peculiar tailless primates? Why would such a magnificent being be so obsessively, nit-pickingly preoccupied with trivial matters such as the dress code and sexual behaviour of one mammalian species, especially its female members? What are angels? Did they evolve through natural selection? Are they primate cousins of *Homo sapiens* like Neanderthals? If not, why do they look so much like us?

Questions such as these begin to signal the threat that evolutionary theory poses to our traditional philosophical convictions. However, the implications go far beyond raising awkward questions. Right from the start, people sensed that Darwin's theory would have radical implications for philosophy. Darwin himself suspected that this was the case. In one of his early notebooks on the transmutation of species, he made a cryptic remark: 'Origin of man now proved. Metaphysics must flourish. He who understands baboon would do more toward metaphysics than Locke.'[5] Being a rather cautious individual, he didn't elaborate much on this suggestion. Others, however, were not so reticent. In the latter half of the nineteenth century, there was a

[4] Russell (1950), p. 146. Note that *Pithecanthropus erectus* (or Java man) is now classed as a specimen of *Homo erectus*. *Homo pekinensis* (known also as Peking man or Beijing man) belongs to a subspecies of *Homo erectus*: *Homo erectus pekinensis*.

[5] Cited in Barrett *et al.* (1987), p. 539.

flood of suggestions about what Darwin's theory implied. There was also a lot of disagreement. (This shouldn't be too surprising; as the psychologist William James pointed out, the only thing philosophers can be relied on to do is to disagree with each other.) Some thought that evolutionary theory posed a grave threat to theistic belief, others that it was 'an advance in our theological thinking'.[6] Some thought the theory toppled us from our assumed perch at the top of the animal kingdom, others that it explained how and why we came to be superior among the animals. Some thought that evolution showed us what is right by moving towards it, others that the theory implied that *nothing* is right or wrong – in other words, that evolution undermined morality altogether. Within a decade of his death, Josiah Royce was able to write of Darwin's masterpiece, *On the Origin of Species by Means of Natural Selection*, that, 'With the one exception of Newton's *Principia*, no single book of empirical science has ever been of more importance to philosophy than this work of Darwin.'[7]

Unfortunately, though, for most of the twentieth century, philosophers all but forgot about Charles Darwin.[8] Most adopted the Wittgensteinian view that evolutionary theory had no implications for their field. Darwin's fortunes in philosophical circles didn't start changing until the latter decades of the twentieth century, when philosophers such as Daniel Dennett, Michael Ruse, and Peter Singer brought a deep appreciation of evolutionary theory to their work. Dennett in particular has made it his mission to sing Darwin's praises. In his view, Darwinism is a 'universal acid', the influence of which seeps out to infect every area of human thought. Philosophy, he argues, is no exception.

Of course, philosophy itself already enjoys a reputation as a powerful corrosive agent, challenging and overthrowing our most fundamental beliefs. The dyspeptic nineteenth-century philosopher Friedrich

[6] Cited in White (1896), p. 103.
[7] Royce (1892), p. 286.
[8] Cunningham (1996).

Nietzsche (who was strongly influenced by Darwin's ideas) described it as 'a terrible explosive from which nothing is safe'. Thus, the question we'll be concerned with in this book is: what happens when you mix a universal acid with a terrible explosive? The short answer is that it challenges some of our most cherished and longest-standing beliefs about God, man, and morality. The long answer is the remainder of this book. But before we launch into a detailed discussion of any of these issues, let's take a brief tour of the terrain we'll be covering, the questions we'll be asking, and the opinions we'll be meeting along the way.

Part I: Darwin gets religion[9]

I open with the question of the existence of God. Did God create us in his image, or did we create him in ours? Or, as Nietzsche put it, 'Is man one of God's blunders? Or is God one of man's blunders?' Here are some of the other questions we'll be asking in this section:

> Can someone who believes in evolution believe in God as well? • Did God directly guide the evolutionary process? • Did God choose natural selection as his means of creating life indirectly? • Must we invoke God to explain the origin of life, the origin of the universe, or the origin of consciousness? • Does the suffering entailed by natural selection suggest that there could be no God – or that if there is a God, he must be evil?

We won't be concerned with the full range of arguments for and against God's existence, but only those directly related to Darwin's theory. Here's a synopsis of the chapters that make up Part I (Chapters 2–7).

Chapter 2: Clash of the Titans

We'll start at the beginning: did we evolve or did God create us in our present form? These are not, of course, the only options, but they're the ones that get the most airtime and that are the most important to

[9] Parts of this section are based on Stewart-Williams (2004c).

the most people. One of them also happens to be correct. Those readers already familiar with evolutionary theory, and with the evolution v. creationism debate, may wish to skip ahead to the next chapter, but my hope is that even these readers will find something of value here. The chapter starts with a sketch of the Creationist viewpoint followed by a sketch of evolutionary theory. (Did you know that Darwin did not actually originate the concept of evolution?) Then we'll survey some of the fascinating and bizarre evidence supporting Darwin's theory. We'll see how evolutionary theory explains otherwise inexplicable facts about the biological world, such as why bat wings are less like bird wings than they are like whale flippers; why flightless birds have wings; why human embryos have gill slits; why whales are occasionally born with hind limbs; and why humans are occasionally born with tails. Finally, we'll examine some of the arguments against evolutionary theory. One of the most persuasive of these asserts that there are certain things in the biological world that simply could not have evolved through natural selection. This includes the bacterial flagellum, the immune system, and the blood-clotting system. Even some scientifically minded laypeople are secretly given pause by these apparently reasonable arguments. If you're one of them, you've been taken in by the slick marketing of the Intelligent Design movement. Hopefully, by the end of Chapter 2, you'll never suffer from this malady again.

Chapter 3: Design after Darwin

In Chapter 3, we'll turn our attention to an important philosophical argument for the existence of God: the argument from design. The basic idea is as follows. Certain parts of the natural world look as though they were designed (eyes, teeth and claws, for example); you can't have design without a designer; thus, there must be a designer and the designer is God. We'll see that evolutionary theory undermines this argument and therefore poses a serious threat to theistic

belief, *even for those who believe for other reasons*. We'll also see that, within this area of philosophy, Darwin had a greater impact than one of the greatest philosophers of all time: David Hume.

Chapter 4: Darwin's God

The remaining chapters of Part I address the question: can someone who believes in evolution also believe in God? In a sense, the answer is clearly yes, you can believe in both. We know this because a lot of people *do* believe in both evolution and God. This fact is often held up as evidence that these beliefs must be compatible. But the conclusion is too strong; it shows only that, if they're incompatible, it's not in any obvious or straightforward way. We might still find that, when we look more closely, they are inconsistent with one another. In addressing this issue, we'll sample some of the clever ways that believers have tried to meld their belief in God with the truth of evolution. Some suggest, for instance, that God personally guided the evolutionary process, either in whole or in part. Others suggest that, rather than intervening, God chose natural selection as his means of creating life. Many notable scientists and other intellectuals have held views of this kind. Thus, if you think these are reasonable solutions to the problem of reconciling God and evolution, you're in good company. But you're also wrong. That, at any rate, is what I hope to persuade you in Chapter 4.

Chapter 5: God as gap filler

In this chapter, we'll deal with a counterargument that will already have occurred to some readers. Evolutionary theory may account for the apparent design found in the biological world, but there are still many mysteries left to explain – mysteries that may require us to posit the existence of God. Mystery 1: how did life begin? Evolutionary theory can explain the origin of new species from pre-existing species,

but it can't explain the origin of life from non-life in the first place. How did the first self-replicating molecules come to exist? Mystery 2: how did the universe begin and why is it so exquisitely suitable for the evolution of life? Mystery 3: how is mind or consciousness possible in a world of mere matter in motion? Each of these questions reveals a gap in the scientific vision of the world, a gap that perhaps only God can fill. As we address them, we'll encounter ideas that to many people might seem quite outlandish, including the idea that this universe is merely one of many, and that Darwinian principles shed light on how universes come to have the properties they do. We'll see, though, that given the current state of play in physics, such ideas are – at the very least – not unreasonable. Also in the realm of surprising conclusions, we'll see that an examination of the evolved mind actually *lowers* our estimate of the likelihood that God exists, rather than raising it. And we'll touch on what I like to think of as the ultimate question: why is there something rather than nothing?

Chapter 6: Darwin and the problem of evil

Evolutionary theory doesn't just eliminate reasons to believe in God; it provides reasons *not* to believe. Have you heard of the problem of evil? It's an argument against the existence of God, the gist of which is that an all-powerful and all-good God would never allow as much 'evil' (i.e., suffering) to exist in the world as we actually find, and thus that there probably is no God. Evolutionary theory radically exacerbates the problem of evil. The evolutionary process that gave us life involved grotesque quantities of suffering across vast tracts of time. Darwin himself described it as 'clumsy, wasteful, blundering, low, and horribly cruel'.[10] Why would God choose to create life in such a reprehensible manner? Our conclusion in this chapter will be that, if there really were a God, the Creationists would be right – but they're

[10] Cited in F. Darwin and Seward (1903), p. 94.

not so there probably isn't. As we make our way to this conclusion, we'll deal with various related issues, such as: are other animals conscious? Do they experience pleasure and pain, or are they merely unconscious biological machines? Even if there really is a God, should we obey him? (You'll need to make sure you read the footnotes if you're interested in the latter question.)

Chapter 7: Wrapping up religion

Chapter 7 deals with a common response to the types of arguments discussed thus far, namely, that they only deal with a traditional, anthropomorphic conception of God. Many claim that the God they believe in is something far grander and more refined than this traditional conception; it is Ultimate Reality, or the Ground of All Being, or the condition for the existence of anything, etc. Maybe such a vision of God is immune to the universal acid of Darwinism. Then again, maybe it's not. This is the subject matter of Chapter 7, the final chapter of Part I.

Part II: Life after Darwin[11]

Moving right along, our second major topic is *philosophical anthropology*, the sub-discipline of philosophy that deals with questions about human beings, their status in nature, and the meaning and purpose of human life. Here are some of the questions we'll be asking in this section (Chapters 8–10):

> Does the mind survive the death of the body? • Is the universe conscious? • Are we superior to other animals? • Are we *inferior* to other animals? • Does natural selection inevitably produce progress or is this a misunderstanding of Darwin's theory? • What is the meaning of life? • Does evolutionary theory imply that life is ultimately meaningless?

[11] Parts of this section are based on Stewart-Williams (2002, 2004a).