

A Darwinian Worldview

Sociobiology, Environmental Ethics
and the Work of Edward O. Wilson

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Contents

<i>Acknowledgements</i>	vii
1 Introduction	1
PART 1 THE EXPLANATORY ISSUE	
2 Sociobiology	21
3 Evolutionary Psychology	39
4 Gene-culture Co-evolution	59
5 Consilience	77
PART 2 THE MORAL ISSUE	
6 Darwinian Naturalism, Environmentalism and Humanism	95
7 Naturalism and Morality	113
8 The Possibility of Environmental Ethics	127
9 Evolution, Meaning, Suffering and Death	145
10 Conclusion	161
<i>Appendix</i>	177
<i>Bibliography</i>	189
<i>Index</i>	195

Chapter 1

Introduction

This book aims to explore the implications of what will be referred to as a Darwinian worldview. Charles Darwin did not intend to produce a worldview when he wrote *Origin of the Species*, aiming solely to tackle the specific intellectual problem referred to in the title of his book. Since he published that work in 1859 his scientific ideas have moved from the realm of the speculative to become received, in their twentieth-century neo-Darwinian form, as part of scientific orthodoxy.

However, many thinkers have developed from his account of the origin of species, especially as applied to our own species, a distinctive perspective on the universe that merits the label ‘worldview’. A worldview embodies a specific understanding of reality, based on presuppositions that are regarded by its exponents as, at least, reasonable, and, more boldly, as firmly established or even indubitable. From these presuppositions a synoptic account is developed of the basic features of reality, encompassing the human and non-human realms, and of how they relate to each other: which are fundamental, which derivative; which are fugitive, which permanent; which have value, which do not. There are various forms of worldview, such as religions and ideologies. But not all worldviews are religious, even though they do all embody metaphysical positions, nor are they all ideologies, at least if we take the latter to involve an orientation of practical action in pursuit of socio-political purposes (Heywood 2003: p. 12). The claim that the Darwinian worldview is a new religion is one that we will have occasion to examine later in this book.

The Darwinian worldview embodies, of course, the two key ideas of Darwin’s theory as applied to human beings. Firstly, it takes as axiomatic the claim that ‘*Homo sapiens* is an animal species’. Secondly, it accepts the Darwinian claim that this species, like all others on the planet, has arisen by a process of evolution by natural selection from an ancestor common to them all. My own interest in this worldview stems from the fact that these two claims regularly form part of the case made by environmental ethicists for the argument that human beings have moral responsibilities towards, and not simply with respect to, the non-human world of living entities. For such ethicists, in which group I include myself, we are held to be an animal species with a variety of important interconnections with the non-human world, and indeed to share a common descent with all other life-forms on the planet, as the theory of natural selection implies. This fact of our interconnection is held to justify the view that we have the obligations just mentioned (see, for example, Norton 1991). Contrariwise, we are not justified in

regarding the rest of the living world as no more than a set of resources to be used for our own purposes as we see fit.

One of the main purposes behind this book is to discover whether there is any important connection between the views that share these presuppositions. Is the Darwinian worldview complementary to the environmental ethicists' project? Does it support it in any significant ways? Can reasons be found from within the Darwinian worldview for claiming both that an extensive environmental ethic is justifiable, and that we are capable of putting such an ethic into effect? Or, ominously from the point of view of environmental ethics, does the picture which emerges from the Darwinian worldview of the bases of human morality make it very unlikely that human beings are capable of putting into practice any very extensive environmental ethic (Ridley 1996)? Are we 'by nature' non-environmentalists, or even anti-environmentalists? For that matter, does the Darwinian worldview have *any* implications for morality, whether as applied to the environment or anything else?

These questions are basic to the project of this book. But, in seeking to answer them there is inevitably a whole set of other questions that have to be tackled. These are questions that are raised by the attempt to elucidate and defend the Darwinian worldview itself. To see what these are, we have to begin by giving an outline of the worldview, and this involves examining the various important conclusions which defenders of the worldview argue are to be drawn from the claims already mentioned.

The first is that the Darwinian account is capable of explaining how the appearance of design, which is so striking when the intricacies and adaptedness of life-forms is examined, may be satisfactorily explained without the need to suppose that there is a supernatural designer. Since that conception has long underpinned the most important argument of natural theology – arguing from the perceived nature of the world to the conclusion that there is a deity underlying that world – the Darwinian worldview has struck a serious blow to some important forms of religious argument.

Of course, it leaves untouched religious views based on revelation, but such revelations, as is well recognised, are problematic because they are competing. They cannot all be true, and it is highly questionable whether one can determine by rational means which, if any, actually are true. This is the central weakness of the anti-Darwinian position known as 'creationism', which seeks to claim that the account of evolution by natural selection is false, not primarily because of its inherent intellectual failings (though creationists have sought to show that it is not adequate to the facts) but because a revealed text, the Book of Genesis, says the origins of species, and of life, are to be accounted for in some completely different way.

This way involves divine creation, of course, but that is really only a detail. The important point is that creationism counters a scientific account with one based on revelation. Once this is allowed, then of course science as a whole becomes problematic, for the whole of modern scientific cosmology contains an account

of the origins and age of the universe that cannot be reconciled with a literal understanding of the Book of Genesis. Yet for many people, including many religious believers, science is arguably the only form of intellectual endeavour which can produce something worthy of the term ‘knowledge’, even if it is not guaranteed to do so.

The recent successor to creationism, intelligent design theory, on the face of it does not face this problem, since it does not overtly claim to counter science with revelation, but seeks to remain an alternative scientific theory. It aims to show the empirical inadequacy of Darwinism, and provide empirically-testable reasons for hypothesising a designer of some sort to account for design in life-forms, in at least some instances – those supposedly manifesting ‘irreducible complexity’. The latter is held to be complexity of such a kind that it cannot be derived from earlier, simpler, foundations, by blind causal processes, as Darwin’s theory of evolution requires, for those bases would not have been biologically viable. Only an intelligent designer, on the analogy with human makers, can account for the existence of such phenomena, for only such a designer can effect the transition from simple materials to complex reality without the need for intermediate, simpler stages.

Those arguments appear to fail, partly because the instances of irreducible complexity upon which the theory relies are no such thing, but partly because the postulation of the existence of such designer(s) is scientifically worthless. If the designers are themselves natural phenomena, in principle accessible by normal empirical modes of observation, then we will need a scientific explanation of them in turn, and we will have in effect simply recategorised natural phenomena as artefacts. This will introduce no new principles into science. It will rather be a discovery of a purely historical nature. If the designers are supernatural, then, *ex hypothesi*, we can have no way of investigating them scientifically.

Hence, the Darwinian worldview appears to make religious belief a more problematic matter than it appeared to be prior to Darwinism. It is possible to be a Darwinian and still hold to a religious belief, but that belief cannot any longer rely for support upon the design argument. And arguably the Darwinian worldview undermines some of the other bases for traditional religious worldviews. Thus, the fact of, and experience of, morality – of a sense of right and wrong, good and bad – has often been held to justify the positing of a supernatural source for such ideas and principles. But Darwinian accounts are available, developed from Darwin’s own theories, on the topic of how morality has emerged as a natural phenomenon within certain kinds of animal species. We must now, many Darwinians claim, think about morality naturalistically, not supernaturally.

In fact the implication of Darwinism, once we encompass the human species within its purview, appears to be that naturalism becomes the required approach towards the understanding of all the phenomena – intellectual, moral, aesthetic, emotional – which have been long held to be distinctive of human beings. For these phenomena are manifestations of one evolved organ – the human brain.

Whatever capacities this organ possesses must have been arrived at, if Darwinism is correct, by the process of evolution with natural selection at its core.

It is to be noted right away that it is a matter of dispute among Darwinians just how far all the biological phenomena we observe are to be accounted for exclusively by means of natural selection. But even these points do not detract from the fundamental naturalism just postulated. For, on all accounts, natural selection has been a vitally important mechanism for the evolution of species, even if not the sole one. Also, the alternative explanations proffered by Darwinians who criticise what they believe to be too heavy a reliance on natural selection are themselves naturalistic. They rely on alternative causal mechanisms – biological or cultural – which are to be located firmly within the realm of natural scientific investigation (Gould and Lewontin 1979).

Another key ingredient in the Darwinian worldview concerns the degree to which Darwinian approaches are capable of cementing a unified intellectual approach towards an understanding of human beings. It is important to note that naturalists are not co-extensive with Darwinians. Some forms of naturalism postulate important causal, and empirically accessible, processes that are nevertheless held to be disconnected from the causal processes that pervade the physical world. This is held specifically to apply to the world of human culture. This view has long underpinned the dominant idea that the social sciences and the humanities are in some fundamental way disconnected from the study of the rest of nature, even if the proponents of such views are themselves as strongly supportive of naturalism as most Darwinians appear to be (Dupré 2001). Darwinism is fine for non-human animals, but fails in the attempt to grasp human beings. ‘Darwinism for non-humans, and culturalism for humans’ is the slogan of this group of naturalists.

One might, then, characterise the most radical form of the Darwinian worldview as maintaining the contrary slogan, that Darwinism is appropriate for all life-forms. This is not the same as saying that we can understand human beings in exclusively biological terms. Rather, the version of the view that will command our attention is the more nuanced one that has recently been dubbed by Edward O. Wilson ‘consilience’. This aims to connect up the social sciences and humanities to the biological level of understanding so as to project a unified form of knowledge at all levels. Having seen the challenge which Darwinism poses to traditional versions of religion and moral theory, we can now see the challenge it poses to received views of the appropriate ways to study human beings.

Finally, the Darwinian worldview throws up a series of challenges to our perennial search for meaning, for both our own lives and for the existence of life in general. We may call this the ‘spiritual’ challenge of the Darwinian worldview. In many ways it is the most important, and the most underdeveloped, of all the aspects of the Darwinian perspective. With its emphasis on contingency and chance in the account it offers of the development of life on Earth; with its emphasis on the role of competition, suffering and death in the shaping of species by natural selection; with its denial of any overall point or plan to the process of

evolution, and with the blows it has struck to any reason- rather than faith-based belief in a benevolent creator, judge and saviour, Darwinism seems to many to render all life as pointless as it is painful.

Darwin spoke of the evolutionary account of life as having a certain grandeur, and that may well be true also. And if it is true, then the features just outlined which are intrinsic to it will just have to be accepted. The challenge is to find out how much of what many human beings cherish can be shown to be rationally defensible within this worldview. Truth may be there, but truth in itself can be a hard, perhaps impossible, thing to bear. Human beings want to have meaning, love and justice located in the heart of reality. Can a place be found for these within the Darwinian worldview?

In what follows an attempt will be made to investigate these issues to varying degrees. The two main issues that will be taken up will be the explanatory issue, concerning just how far the Darwinian perspective can illuminate much of importance about human life, and the moral issue concerning the Darwinian naturalist approach to the understanding of human morality. Within the latter, the question of what are the implications of the Darwinian worldview for environmental ethics will be given specific attention, for the reasons presented earlier. The issues of religion and meaning will inevitably enter into the investigation of these questions. Let us now take a further preliminary look at these two issues.

The Explanatory Issue

The first, the explanatory issue, concerns how far the phenomenon of evolution by natural selection can be used to explain human nature and human behaviour. In examining this issue the book does not consider the views of those who deny the Darwinian perspective entirely, such as creationists. Rather, it looks at the, often heated, disputes between those who are happy to accept the basic correctness of the Darwinian perspective, but who differ over how far such evolutionary history can be used to explain the nature and behaviour of human beings, as observed both currently and in the historical record.

There is less dispute, amongst those who accept Darwin's basic thesis, about the usefulness and importance of Darwin's ideas for an understanding of non-human animals and other forms of life – although some would argue that the understanding of non-human animals also requires an ineliminable non-Darwinian level of explanation. However, hackles begin to arise most vigorously when some Darwinians attempt to explain human beings in terms usefully employed in zoology and ethology.

The specific dispute which has formed the focus of much debate in this first issue area concerns the possibility of human sociobiology. In the final chapter of his 1975 book *Sociobiology: The New Synthesis*, Wilson began to apply these concepts and theories to the study of human beings, triggering a fierce debate

over how far an evolutionary approach to the study of human beings is possible or useful. Philosophers, social scientists, psychologists and biologists have debated whether the human brain, and thus the human mind, is usefully conceived of as an adapted organ – that is, one containing structures selected, largely or exclusively, by the environment of our hunter-gatherer ancestors for their contribution to those ancestors' reproductive success.

By the mid-1980s there had emerged a now thriving group of researchers calling themselves 'evolutionary psychologists' who took their inspiration from Wilson and who have been engaged in the attempt to explain what they believe to be universal patterns of human behaviour on the basis of just such adapted structures. Their critics have dismissed their findings as 'Just So' stories and their general approach as misconceived, on the basis that the overwhelming influence on the development of the individual human brain is social and cultural. Hence, it is argued, the study of human beings can only properly be conducted at the level of culture and society – although there remains profound disagreement among the proponents of this general position as to how exactly such a study should be conducted.

Sociobiologists think that it is possible, and increasingly can be shown to be feasible and important, to discover structures within the human brain which in some way govern the important forms of human behaviour. These structures are held to have arisen by means of natural selection, and to have been selected, therefore, because their presence in human brains during the long period of the Pleistocene conferred upon their owners a reproductive advantage. For this explanation to work, the structures in question have to have some genetic basis. Precisely what this is in the case of each putative structure, and what the contributions of non-genetic factors may be to the development and deployment of such structures, are some of the key points under dispute.

In examining this series of debates it will be necessary to reach some view on the defensibility of what might be called the 'sociobiological' perspective on human beings. The term 'sociobiology' has fallen into disrepute in some quarters, for reasons which will become apparent as we investigate the disputes already alluded to (Midgley 2002: p. x). But it will be used in this book as a useful term to classify a developing family of Darwinian approaches to the study, and explanation, of human beings, of which the approach already noted, called evolutionary psychology, is a prominent member. As will be explained more fully later, however, this family of approaches has developed some internal diversity in recent years, so that evolutionary psychology is not the only, and perhaps not the most promising, version of the sociobiological approach. Reasons will be uncovered later for favouring the line of development favoured by Wilson himself, which has been dubbed gene-culture co-evolution theory.

An important aspect of the dispute here is over the precise character of Darwinism. The most uncompromising, although nevertheless subtle, view is that represented by Daniel Dennett (Dennett 1995). He suggests that Darwin's achievement lay in showing how the development of all living beings, including

humanity, could result from an algorithmic process – a blind but orderly sifting out of actualities from the huge design space of possibilities available within the structures of physical reality.

For an algorithmic process to provide the explanation of the origins of all design features observable in actual species it is necessary to reject explanations that posit sources of design outside the processes embodied in the algorithm(s). All design features must be shown to develop from already-existing features produced algorithmically. We must, as good Darwinians, only employ ‘cranes’ – mechanisms resting upon, and constructed out of, earlier phases of material development, not appeal to ‘sky hooks’ (or a *deus ex machina*), to account for design features of organisms, including human beings. In this way, Darwinism is reductionist (all new features derive by intelligible processes from existing features) though not, Dennett argues, ‘greedily reductionist’ – that is, seeking to show that the proper explanation of any behaviour has to appeal solely to the first elements in the sequence of design features. A proper Darwinian explanation, therefore, of structures essential to the workings of any organism will eschew the idea of prior design. Structures emerge by the working of natural selection – an undeniably ‘brute’ and wasteful process involving death and destruction and, when sentience has evolved, much pain and suffering.

On this view, to be a Darwinian is to espouse algorithmic processes as one’s sole explanatory tool, and to be a reductionist (though not a greedy reductionist) in one’s explanations. Other Darwinians (for example, Gould and Lewontin 1979) reject the idea that one is committed to such an all-encompassing view by acceptance of Darwin’s theory. For them, evolution by natural selection may explain a great deal of the observable properties of organisms, but one has to appeal to features beyond natural selection in many cases. Not all of the features present in organisms can plausibly be said to have arrived there as the result of natural selection. For example, some are side effects of other changes that were adaptations. Some have resulted from the random series of genetic changes known as ‘genetic drift’, the full extent of which has become apparent since we have acquired detailed knowledge of the molecular composition of the human genome (see the Appendix of this book). They claim that when one comes to the human case a whole new phenomenon – language, and the culture which that makes possible, become of vital importance in explaining human nature and behaviour (Dupré 2001).

This first issue, then, concerns a heated dispute within Darwinism. Must we reject any form of sociobiology, at least as applied to human beings, even if we are Darwinians? Or are we committed to some (subtle and sophisticated) form of sociobiology by our Darwinism? At stake in this dispute are many further issues, such as where we should stand on the idea of human perfectability if we are Darwinians, and the long-standing issue of whether biology on the one hand and social science and the humanities on the other have any important points of contact – is the latter (non-greedily) reducible to the former?

On this latter issue, Edward O Wilson has also contributed much, particularly in terms of the concept of ‘consilience’. This is the idea that the social sciences and the humanities ought to be connected across organisational levels to the natural sciences, just as chemistry is connected to physics, biology to chemistry and (in Wilson’s view) psychology to biology. Wilson denies that this is a ‘greedy’ form of reductionism, for higher levels will contain important phenomena that can only satisfactorily be explained at that level. But higher levels need to be compatible with lower levels, and lower levels may impose limits on higher ones.

In spite of the controversial nature of this view, there is often surprisingly little discussion within the ranks of social scientists themselves of the issues that it raises. For example, a recent very successful book – Marsh and Stoker’s *Theory and Methods in Political Science* (2002) – which introduces the research methods of political science, encompassing behaviouralism, institutionalism, game theory, feminism and hermeneutics, contains only two references to evolution and none to sociobiology or evolutionary psychology. (Marsh and Stoker, 2002: pp. 73, 80). The plethora of approaches to the study of politics surveyed by the authors is applauded by them, and by many practising political scientists, as fruitful and unexceptionable, even though they also admit that there is often little meeting of minds, or theories, across the field.

To Wilson and his fellow exponents of consilience, such a situation rather reflects the failure of social scientists to ground their, doubtless otherwise useful, studies on a proper theoretical basis. Exponents of social science and the humanities are said to fail to grasp that their theorising has to be at least compatible with what has been discovered about human (and other animals’) biology and psychology from the Darwinian perspective. Until they attempt such consilience they are doomed to continue inventing an endless series of more or less plausible theories between which choice is either arbitrary or based on the ideological preferences of particular thinkers.

In this book we will examine the current state of play with respect to this first issue area, and aim to determine how far the project of sociobiology, encompassing two of its main varieties – evolutionary psychology and gene-culture co-evolution – can be said to have met the criticisms which have been offered against it.

The Moral Issue

The second issue, the moral issue, considers what view of human morality is required – if any is – by the Darwinian perspective. This can be subdivided into two specific questions.

The first of these is how far human moral thought and action can be explained on the hypothesis that it derives from capacities that are the product of evolution by natural selection. To use Dennett’s terminology, how does a Darwinian who eschews sky hooks (for example, by positing an objectively existing, perhaps divinely created, moral order which at some point begins to impinge upon

human beings) explain the emergence of morality among human beings? What were the ‘cranes’ which were used to build it, how were they used, and what have they created? This is, in effect, the issue of how far morality may be construed naturalistically – as depending wholly upon the evolved natures of the organisms among which it appears.

This naturalistic interpretation of morality may point in the direction of moral universals, at least among human beings, if it is supposed to rest upon genetically produced structures in human brains, wherever and whenever such brains exist. Are there such universals? The answer to this question will depend upon how far it is defensible to argue, on Darwinian grounds, for a uniform basic structure to the human brain, and how far Darwinian processes of natural selection may produce variety in such basic structures.

Gene-culture coevolution theory, as we will be discovering, allows for an interaction between culture and the basic structures of the brain which seems to allow for the possibility that different groups of humans may come to possess brains which are structured in fundamentally different ways. This might seem in turn to allow for different moral standpoints across such human groups, based naturalistically upon what those groups possess in terms of differing basic brain structures. On the other hand, it may be arguable that Darwinian approaches rule this out, and that in spite of differing cultural matrixes, human beings at all times and places share a basically similar environment which tends to produce the same naturalistic basis for the development of moral concepts and motivations.

However this question is answered, we need to note that a naturalistic approach to morality, whether Darwinian or not, faces difficulties which critics of naturalism have frequently highlighted, especially those deriving their inspiration from the Kantian tradition. Firstly, it is argued that naturalism commits the naturalistic fallacy. From the fact that human beings do in fact think some actions to be good and some bad, it does not follow that those actions really are good or bad. You cannot get from statements about what is the case by any logically valid steps to statements about what ought to be the case. Hence, moral thinking is autonomous of factual issues, whether concerning the nature of the human brain or any other phenomenon.

Then there is the troubling contingency which naturalism apparently injects into the characterisation of morality. Naturalism views morality as emerging among certain groups of animals, pre-eminently ourselves, of course. On the Darwinian version of naturalism, this is the result of blind processes of natural selection. It could have been otherwise. The existence and content of what we call morality is thus, from the naturalistic perspective, pervaded with contingency. Perhaps the human species will evolve in future to lose morality in the way that in the past our ancestors lost thick coatings of bodily hair.

From the non-naturalistic perspective, such an eventuality would represent an enormous calamity. We would have lost the key element that gives us our intrinsic value. From the Darwinian explanatory perspective, by contrast, all that can apparently be said about this is that if it produces better inclusive fitness it will

in fact tend to happen. For many people this is a mode of understanding that falsifies the experienced nature of morality, which, again in the Kantian version, confronts us categorically, unqualified by any contextual references to how we in fact are placed. On this non-naturalist view, morality is encountered, not devised, however unconsciously, by moral agents.

Linked to this is another key difficulty, again bound up with the facts of human moral phenomenology. This is the experience of human freedom and autonomy. We do not view ourselves, in the course of moral deliberation, as embedded in causal networks in such a way that our moral decisions can be satisfactorily explained by reference to the causal interactions of the structures in our brains and environmental factors which impinge upon them. We experience ourselves as having the capacity for free choice, and self-determination. We can criticise ourselves for our decisions, lament our weaknesses, resolve to do better in future. Yet naturalism possesses only the language of causality, which has in it, so to speak, solely the capacity for explanation, not for justification or criticism. Thus, naturalism, it is claimed, undercuts the freedom on which alone it makes sense to hold ourselves responsible and accountable for our actions. Non-naturalism of course, having made this case, then faces its own distinctive difficulty, of providing a satisfactory account of how such freedom is possible without appeal to natural phenomena.

Such anti-naturalist arguments can be found from both religious and humanist (not mutually exclusive categories) points of view. It will thus be necessary to give full consideration to these kinds of critique, which focus upon what are perceived as the falsifying and reductionist view of morality emanating from Darwinian and other forms of naturalism. The challenge for Darwinian naturalism is to give an account of the emergence of morality among human beings which retains the contingency inherent in the evolutionary processes while coming to terms with the phenomenology of moral thought and action so dramatically highlighted by non-naturalist critics.

Darwinians in general are not amoral people. Some have argued strenuously on moral grounds for various courses of action to be pursued by individuals and groups. They cannot, therefore, readily accept any position that debunks morality as an illusion of some kind. And if the phenomenology of human moral thought is not an illusion or a confusion, and we correctly experience ourselves as on at least some occasions autonomously choosing to accept for ourselves moral imperatives which seem in some way to be categorical, then Darwinian naturalism needs some explanation of these facts.

This is not to say that Darwinian naturalism needs to accept the humanist and traditional religious interpretation of such phenomena. It may be that some debunking can go on in this field in a way that retains the centrality and intelligibility of morality to human life. But it does mean that Darwinian naturalism has to tread a narrow path between wholeheartedly accepting the humanist/religious interpretation of morality, which runs counter to the Darwinian perspective, and rejecting morality as some kind of illusion.

If Darwinian naturalism can provide a satisfactory account of the emergence and character of morality, it still has to deal with the second sub-issue, which concerns the content of human moral beliefs. Here a plethora of questions arises. Does the production of human morality by natural selection mean that it is inevitably strongly circumscribed by that origin? Is it, in some sense, always primarily to do with the well-being of the proponents of moral views? Is genuine altruism possible within it? Is it possible for human beings to accord moral recognition to the non-human? Or does human moral thought only work when human beings are its object of concern?

Questions such as these are of perfectly general significance, but in recent years they have taken on a wholly new cast. For many moralists now wish to argue for moral views which are not 'anthropocentric', or not exclusively so, in the light of what is held to be a developing environmental crisis. Some argue that, precisely because we are an animal species that has evolved by natural selection, we are both interconnected with, and interrelated to, the rest of organic life on this planet in ways that give us good reason to take the well-being and interests of such life on board in our moral deliberations. We are held to have moral obligations to life forms in general, obligations that ought to lead us to alter our patterns of behaviour in various drastic ways. In other words, taking seriously the fact of our evolution by natural selection means that we must commit ourselves to an environmental ethics, one which does not always put our own species first.

The case for this form of environmental ethics will not be fully explored in this book. I have discussed the issues raised by it fully elsewhere (Baxter 1999; 2004). Instead, attention will be focused on a key question that the Darwinian perspective raises for environmental ethics. This is whether what we may be discovering about human nature from the sociobiological approach shows that such an ethics is in some sense natural for us, or whether it rather shows that such an ethics would be difficult for us to achieve. The issue on which this turns concerns the sources of moral motivation, rather than the question of how we are to elucidate what morality requires with respect to the non-human. The two issues are logically distinct. It may be that Darwinian naturalism can provide a convincing account of the structure of moral thought – determining what counts, morally-speaking, when we deliberate over what we ought to do – and thus can make conceptual room for the emergence of environmental ethics. But it may well be that the naturalist account of morality which Darwinism furnishes will make it problematic for human beings, or most of them at any rate, to be motivated, or motivated strongly, to do what they recognise is required of them by morality with respect to the non-human.

The implications of Darwinian naturalism in this regard may depend once again on how far it licences a view of human nature as having a universal character, and how far there may be scope, via gene-culture co-evolution for example, for the development within human beings of significantly varying basic brain structures governing behaviour. If universalism is vindicated, then Darwinian naturalism may discover that there is a universal tendency among human beings to adopt

an environmental ethic, in at least some circumstances. It may, of course, find no such tendency at all – though this is perhaps unlikely, given that many thinkers are devoting themselves to the development of just such an ethic – or it may find that it exists in only some individuals, or even a great many, but not universally. Another possibility is that the gene-culture co-evolution approach will find scope for permitting the development within significant numbers of human beings of tendencies to act in accordance with some form of environmental ethics. This would turn on the extent to which cultural factors can influence the development of moral motivation.

Of course, if it should turn out that Darwinian naturalism can find neither universal proclivities towards environmental ethics, nor the possibility of such proclivities developing in significant numbers of human beings as the result of gene-culture co-evolution, then the problem is not so much for Darwinian naturalism as a theoretical approach but for human beings in general. For we would be faced with the question of how we are to be brought to implement courses of action which we can recognise to be morally required but which we find ourselves reluctant to pursue. However, it would be a significant advance to discover that this was the case, for we might then have a clearer view of the precise nature of the difficulties and of how they might be overcome.

We should note that the existence of environmental ethics poses difficulties for the non-naturalist account as much as for the naturalist account. This is because a non-naturalist account, whether humanist or religious, has not hitherto been notable for any well-developed environmental ethic. Indeed, in the Kantian version it becomes highly problematic as to how any sense of moral obligation towards, as opposed to moral obligation with respect to, the non-human can be made intelligible. This is curious if morality is conceptualised as comprising categorical imperatives that are encountered rather than devised by human moral thought. The historic failure to encounter imperatives that take non-humans to be their object of moral concern requires some explanation, an explanation which may be difficult to provide from the non-naturalist perspective, given the difficulty which non-naturalism has in accounting for the origin of moral imperatives in general.

But for a Darwinian there is another important, and rather neglected, issue, namely whether the waste and suffering inherent in the process of natural selection means that we cannot properly be expected to have moral respect for a natural world within which such a process is absolutely central. Should we not seek rather to escape the nightmare of natural selection, and put as much distance as possible between ourselves and natural processes/entities? As Lisa Sideris asks, can we love a world with the often horrific workings of natural selection at its core (Sideris 2003)?

The Contribution of Edward O. Wilson

Several Darwinian thinkers have addressed the two issues – the explanatory and the moral. But often sociobiologists, evolutionary psychologists and gene-culture co-evolutionists are mainly concerned with how to generate useful and testable hypotheses concerning the evolved brain structures held to underpin human behaviour, including morality. It is hard to think of many that have had a great deal to say about the issues of environmental ethics. Contrariwise, although environmental ethicists have often focused on the fact of human beings' location within an evolved nature to seek to ground their environmental ethics, they have not usually taken a view on how far human beings, and their moral behaviour, can be explained in terms deriving from that evolutionary perspective, although one eminent environmental ethicist – Callicott – is well-known for his interest in sociobiology (Callicott 1989: p. 11).

One thinker, however, who has had much to say on both issues is someone whom we have already had occasion to mention several times – Edward O. Wilson. As a prominent biologist, he is both a proponent of human sociobiology (and has been a chief target of those Darwinians and others who wish to downplay the role of genetically-based adaptations in human life) and has extensively argued in favour of a comprehensive environmental ethic, particularly with the aim of preserving the biodiversity of the planet in the face of destructive human behaviour. His publications in the former area encompass *Sociobiology: The New Synthesis* (1975), *On Human Nature* (1978), *Genes, Mind and Culture* (with Charles Lumsden, 1981) and *Consilience: The Unity of Knowledge* (1998). His environmental ethics can be found in various publications to do with the natural world, such as *Biophilia* (1984), *The Diversity of Life* (1992) and especially in *The Future of Life* (2002).

Accordingly, in this book we will take Wilson's discussions of both issues as an object of analysis in order to ascertain whether a unified and coherent Darwinian worldview is available, and whether Wilson's is the best version of it. To anticipate the main criticisms of Wilson with respect to each of the issues, he has been accused of too reductivist a view of the relations between human biology and culture, and has been accused of too anthropocentric a view of environmental ethics. These two criticisms are obviously connected. His reductivism with respect to human moral thought is argued to rest on his view of it as heavily infected with the self-interest of the individual – kin selection and reciprocal altruism play a large role here. His anthropocentrism with respect to environmental ethics takes the form of arguing for the preservation of species and habitats for the human benefits that they promise.

He does have one distinctive form of argument that tends in a different direction, namely the case he makes for the existence within human beings of an evolved trait which he labels 'biophilia'. This still emerges on the back of human self-interest in the course of evolution, but, in Wilson's view, gives us the capacity to care for other life-forms and thus is able to ground environmental ethics on a

motivational foundation of some weight. However, whether biophilia, even if it exists, is up to this task is an issue that we will have to consider carefully.

Conclusion

Clearly, there are various possibilities that might emerge from an investigation of the Darwinian worldview. With respect to the explanatory issue, it may transpire that Darwinism has nothing very useful to say about human nature and behaviour, as many of the critics of sociobiology aver. If so, the idea of consilience between the natural and social sciences would have to be rejected, and the hope of the unification of knowledge would have to be abandoned. Presumably culturalism, in all its varieties, would remain supreme in the study of humanity.

With respect to the moral issue, the failure of consilience would still permit environmental ethicists to develop their views with some reference to Darwin's theory. For it would still be possible to make some use in moral argument of the facts of the common descent across time and the interconnectedness of species at a time, which are both made use of in the articulation of the Darwinian hypothesis.

The fact of interconnectedness, of course, is not linked logically with the specific Darwinian hypothesis of evolution by natural selection, even though the science of ecology, which explores the interconnections of organisms with their environment – including other organisms – has relied upon the truth of Darwinism to illuminate its activities. Hence the interconnectedness phenomenon could still survive the intellectual demise of Darwinism itself, however unlikely that latter possibility appears at present. It is also conceivable that the claim that all life-forms share a common descent would remain unscathed even if natural selection as a mechanism is discarded after further scientific investigation, although in that case another explanation would have to be found of such a phenomenon. Hence, environmental ethics might be able to continue to appeal to phenomena currently collected under the Darwinian banner, even should that banner be incapable of entering certain areas of operation, or even should it disappear altogether.

What would be a serious blow to the project of environmental ethics would be the vindication by the Darwinian approach to moral motivation of the claim that many, or most, human beings find it very difficult to care about the non-human, at least if we set aside relations with non-human organisms that we have deliberately entered into for our personal pleasure and convenience. However, this would at least be an important finding. It would not in itself discredit the project of environmental ethics, even though 'ought' implies 'can', for we are used to the idea that some moral requirements are inevitably a strain. However, it would require us to look for some ways of lessening such a strain – including perhaps the need to accept that the best way to induce many people to act in ways which are required by environmental ethics may involve appeal to purely non-moral considerations, such as prudential ones.

This first set of possibilities involves the failure, to various degrees, of the Darwinian worldview to establish its credentials. But it may transpire instead that, with respect to the explanatory issue, Darwinism does vindicate the sociobiological perspective, to at least some degree, or in at least some areas of human behaviour. In such a case the unity of human knowledge beckons. With respect to the moral issue, the upshot of this success may still be that Darwinism will reveal that an extensive environmental ethic is beyond the reach of human beings to implement, even if they can provide a satisfactory rationale and content. But, more positively, it may reveal that some basis for such an ethic can be found within the evolved structures of the human brain, perhaps requiring a specific form of gene-culture co-evolution to produce it.

The aim of this book is to try to discover which of these alternative outcomes is looking the most likely at the moment. It will also try to deal with the key metaphysical problems about meaning and purpose that we have seen to lurk within the Darwinian worldview. This project is as much about mapping and delineating the issues as about reaching firm conclusions. As will doubtless become apparent, my inclination is strongly towards the acceptance of the Darwinian worldview, in spite of the unappealing aspects that many have found present within it. But it should at least be apparent at the end of this investigation that the worldview is worthy of consideration in virtue of the questions which it raises and the answers which it gives, and that the work of Edward O Wilson is an indispensable route into that worldview, even if not all his conclusions can be sustained.

Plan of the Book

In Part 1 we examine what has just been referred to as the ‘explanatory issue’ through a critical exploration of the basic ideas and approaches of the sociobiological family of theories. We begin in Chapter 2 with the application of sociobiology to human beings as presented by Wilson in his seminal 1975 text. This serves to introduce some of the key strengths and weaknesses of the sociobiological approach, while guarding against some of the misconceptions that surround it. In particular, we will consider, and find reasons to reject, common moral objections to the sociobiological project. In Chapter 3 we outline evolutionary psychology and use it to consider further objections to sociobiological approaches. This is done via a consideration of Dupré’s critique of evolutionary psychology based on his analysis of language and culture and his championing of an alternative concept of evolution known as developmental systems theory. This critique is itself criticised, but the importance of integrating culture into the sociobiological approach to human beings is then explored further in Chapter 4 in the context of the concept of gene-culture co-evolution, developed since the 1980s by Wilson and others.

Attention is then given, in Chapter 5, to the concept of consilience, as championed by Wilson and others, which seeks to unify the natural sciences and the social sciences and humanities, via the sociobiological project. Examples are considered of what this barely developed approach might mean for the social sciences. The importance of Darwinism as a *worldview* for the successful attainment of consilience emerges in the course of this discussion. This is because of the ineradicable role of values in human life, which means that agreement on the outcome of the study of human beings presupposes agreement on the issues of values, in which rival worldviews are implicated. This topic thus marks a transition to the second issue area – that of morality.

In Part 2 we turn to the moral issue. Chapter 6 is a transitional chapter, involving a consideration of recent arguments that seek to show that Darwinian approaches to the study of human beings threaten key humanist values, and that in particular environmental ethicists have good reason to reject sociobiology, even though they wish to champion the idea that human beings are part of the natural world, not set over against it. These arguments are held to fail, but they raise the general question of the adequacy of Darwinian accounts of the origin and nature of morality, specifically of the naturalism inherent in Darwinism. In Chapter 7 we consider the pros and cons of naturalism in ethics, especially in the light of the discussion offered by Wilson of the rival Kantian approach which is so often used to indict ethical naturalists of falsifying the nature of moral experience and thought. Naturalism is defended against these attacks, and the implications of naturalism for our understanding of morality, disquieting though they are in many ways, are reported.

In Chapter 8 we examine specifically the case that can be made for environmental ethics in the light of Wilson's arguments, based as they are on conceptions, such as biophilia, drawn from his sociobiological approach. The bases that Wilson unearths in human moral motivation for the development of morally attuned environmental concern are examined, and their problematic nature is established. However, reasons are found from within the Darwinian worldview for attributing some independent moral standing to at least some elements of the natural world.

The Darwinian worldview is considered more directly in the final two chapters. Chapter 9 considers how the worldview compares with some traditional religious rivals, especially in the understanding it affords of meaningfulness in human life, and of the more specific issues of death and unmerited suffering. This leads on to the more general issue of how far the Darwinian worldview has in effect become a new religion. The limited nature of the Darwinian worldview's ability to provide consoling answers to the existential concerns characteristic of human beings is shown, and the argument is developed for the view that the Darwinian worldview is not a form of religion, but rather provides explanations of why we find the existential questions difficult, if not impossible, to answer.

Chapter 10 looks back over the discussion in the light of a parable that highlights the problematic nature of humanity's relation to the natural world,

but that can also be used to show the ways in which the Darwinian worldview explains phenomena that in other systems of thought have to be taken as a brute 'given'. The contribution of Wilson to the discussion of all these issues is finally reviewed.

In the Appendix will be found a brief outline of the key conceptions of neo-Darwinism and sociobiology. Readers with little or no prior acquaintance with these fields may find it useful to read this appendix first before proceeding to the book's main chapters.