

Chapter III: EVOLUTIONARY NATURALISM IN ETHICS: AN APPROACH DESCRIBED AND CRITICISED

Paul Feyerabend recently claimed that in light of twentieth century philosophy of science, 'the problem is no longer how to articulate the monolith SCIENCE, but what to do with the scattered collection of efforts that has replaced it.'¹ Although many do not uphold the particulars of this philosopher's view of science,² few if any would disagree that, at least on the level of everyday practice, science does function as a 'collection of efforts' rather than a single discipline with a homogeneous methodology and subject matter. The naming and function of university departments, academic journals, and textbooks in the realm of 'the sciences' suggest that science more closely resembles a mosaic than a single brushstroke. Whether or not these subdisciplines could theoretically be united is an interesting issue, but a different one.³ The present, and less controversial, point is that scientists in practice do speak in particular jargons, investigate specific objects, converse within roughly distinguishable communities, and call their disciplines by names which delineate their fields from others. If this is the case, then a meta-ethical theory which purports to be naturalistic, might depend on facts germane to any subset of these disciplines-- perhaps even to

¹Feyerabend (1995), 809.

²Papineau (1995), 810.

³Actually, it is at least two: the simpler question is whether or not all of the sciences contribute to a single consistent body of knowledge. To deny this is to espouse a sort of epistemological relativism (discussed in *ibid.*). The other question is whether the concepts used in one discipline are theoretically reducible to terms used in other disciplines. Some (e.g. Carnap (1934); and Crick (1966)) believe this to be possible, whereas others believe that any particular science 'employs concepts which are peculiar to it and indeed have little meaning' in the contexts of others (Medawar (1974), 61; see also Beckner (1974)).

only one discipline. For instance, there could be 'psychological meta-ethics' or 'sociological meta-ethics' (if sociology is counted as a science). Thomas Nagel, in his discussion of the idea that modern scientific disciplines can provide answers to philosophical issues, claims that physics and evolutionary biology are presently the most popular disciplines for this use.⁴ Presumably none would dispute that evolutionary biology outstrips physics in the extent to which a science has been used to provide support for a naturalistic meta-ethic.⁵

This chapter is a description and critique of just one of the ways in which evolutionary biology has been the ethical naturalist's tool. This case-study approach is necessary because certain popular blanket arguments, based on the laws of logic and analysis of the meanings of words, leave a significant area of naturalism untouched-- that of *synthetic naturalism*.⁶ Although similarly broad arguments are currently being developed in critique of synthetic naturalism as well, one of the significant features of this level of naturalism is that ethical principles, properties and terms are understandable with reference to the findings of science, which are not predictable⁷ and continue to accrue through time. Therefore, it would seem premature for a critic to claim to sweep synthetic naturalism away with a single stroke, without dealing with relevant scientific theories. Once a particular naturalist theory has been examined, however, it is possible that certain errors may be discovered that could be common, even ubiquitous, among synthetically naturalistic theories. In this way, a case-study approach can contribute to a critique of synthetic naturalism phrased in broader terms.

The decision to examine evolutionary biology as a source of a naturalist meta-ethic is understandable, given its prominence (as Thomas

⁴T. Nagel (1986), 9.

⁵For examples see the introduction to section C of this chapter.

⁶See ch.II.

⁷On this point see Medawar (1984), essay #2, entitled 'Can Scientific Discovery Be Premeditated?'

Nagel indicated) in today's scientific writing on philosophical topics. It is also potentially helpful because it fulfils a need for the encouragement of scientific respectability in the work of naturalistic meta-ethicists, and conversely philosophical respectability in the work of those writing on the implications of evolutionary biology.

This examination of an evolutionary naturalist approach to meta-ethics will be preceded by a brief summary of the most relevant tenets of evolutionary biology, and a more substantial summary of the subdiscipline of that science which is claimed to provide the support for the naturalist approach-- sociobiology. This will provide the basis for a discussion of a currently influential view of the relationship between evolutionary biology and meta-ethics.

A. Evolutionary Biology: A Brief Overview of the Science

1. PHASE 1: EVOLUTION AS A BIOLOGICAL PROCESS

Since ancient times, writers in a vaguely scientific vein have postulated some sort of continuity among living things. Aristotle noticed with regard to living things that 'the system is not such that there is no relation between one thing and another'.⁸ On the contrary, with respect to classifications of organisms 'because of the continuity, we fail to see to which side the boundary and the middle between them belongs'.⁹ Not until the eighteenth century, however, did European scientists begin to consider seriously the idea that the continuity in life was a *temporal* phenomenon; and more specifically, that some living things could arise in time whilst

⁸*Metaphysics* XII.x.3.

⁹*History of Animals* VII (VIII).1.588b.

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others go extinct.¹⁰ Kant endorsed this idea, which he called the 'cosmic spectacle of ever-lapsing change'.¹¹ Scientists began to question the view, previously assumed in the Plato-influenced world, that significant change was impossible in the history of life.¹² As one writer of the previous century had presaged, 'A Musician strikes not all strings at once; neither is it to be expected that everything in Nature at every time should act'.¹³

The French biologist Jean-Baptiste Lamarck, with his *Philosophie Zoologique*, together with an anonymous work called *The Vestiges of the Natural History of Creation* (later found to be written by Robert Chambers), brought scientific discussion of change in life through time-- evolution-- into the nineteenth century.¹⁴ Especially through the work of Lamarck, the question of *how* evolution worked became a focal point for scientific discussion. An evolutionary theory would have to provide an answer to this question in order to be scientifically respectable. Lamarck's own answer to the question was that a creature can transform itself to some extent during its lifetime by its own actions, and these acquired changes automatically pass to its children. This view gained popularity for a time, but is now defunct.¹⁵ The question as to how evolution worked, or the *mechanism* for evolution, was not answered satisfactorily until the late 1850's, when Charles Darwin and Alfred Russel Wallace independently came to the same conclusion.

2. PHASE 2: NATURAL SELECTION AS EVOLUTIONARY MECHANISM

¹⁰Lovejoy (1936), 244.

¹¹Kant (1755), 84.

¹²Lovejoy (1936), ch.10.

¹³Henry More (1659), II.ch.17.vii.

¹⁴Lamarck (1809); Chambers (1844).

¹⁵For a criticism of his view in light of current scientific understanding, see Cronin (1991), 30-42. This is not to say, of course, that knowledge and abilities cannot be passed from generation to generation; for this is certainly the case, especially in humans. See section B.1a.

Darwin had understood the central mechanism of evolution before Wallace made the same discovery, and Darwin's book, *The Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*,¹⁶ explains the fundamental idea more fully than Wallace did. Part of the object of the book was to defend evolution itself, but as was shown in the last section, this was nothing new. Darwin's status as the father of modern evolutionary biology is rather due to his having discovered and supported a principle underlying evolutionary change: *natural selection*.¹⁷ The principle follows from the following three premises:

1. More organisms are born than the environment can support (Principle of Limited Resources).
2. Organisms differ from each other in ways that are relevant to their chances of survival and reproduction (Principle of Variation).
3. The probability is good that characteristics of an organism will also be characteristics of its offspring (Principle of Inheritance).

To the extent that these premises are true, some characteristics of organisms will tend to increase in prevalence in a population over several generations, whereas other characteristics will tend to decrease in prevalence. The stipulations are that those characteristics be relevant to an organism's chances of survival and reproduction, that they be exhibited to differing extents in different organisms, and that they be heritable. To illustrate, let us suppose that the following are true:

¹⁶Darwin (1859).

¹⁷In addition to Darwin's own explanation of this idea, which is still valid today, this concept can be found described in dozens of works in recent decades, such as S. Gould (1978), Prologue and ch.4; Flew (1984), ch.1; Maynard Smith (1988), part III; and Cronin (1991), ch.3.

1. The environment cannot support all of the robins that are born. (This exhibits the Principle of Limited Resources).
2. Robins vary in the number of eggs they lay. The fewer eggs are laid, the fewer there will be to survive to reproductive age. The more eggs are laid, the less care each chick will receive and so the less healthy each will be. (This exhibits the Principle of Variation).
3. The characteristic of laying a certain number of eggs is a trait which tends to be inherited by robins' offspring. (This exhibits the Principle of Inheritance).

All other things being equal, as the generations pass, robins who lay the right number of eggs succeed optimally in raising chicks. Since those chicks in turn tend to lay the right number of eggs as well, such robins should increase in commonality in the population. The characteristic of laying a certain number of eggs is therefore 'naturally selected' in robins.¹⁸ The term 'selection' should not be seen as a positive choice, but rather as a result of a process of elimination or 'selection against' those individuals that have deleterious characteristics.

Natural selection showed how change could occur in organisms and be perpetuated. As long as variation was significant and diverse enough and traits could be inherited, there seemed to Darwin no end to the power of the mechanism. Over enough time (and geologists were saying that plenty of time had elapsed on this planet¹⁹), perhaps a great deal of the variation evident in nature today arose by the mechanism of natural selection. Darwin provided hundreds of pages' worth of evidence to support this idea in *The Origin of Species*, and added to it throughout the rest of his life.^{20,21}

¹⁸This example is taken from the work of David Lack (1954). See also Lack (1966).

¹⁹The most prominent was Lyell (1830).

²⁰See, e.g., Darwin's longer work *The Descent of Man and Selection In Relation to Sex* (1871).

²¹This summary is incomplete even as an introduction of the most basic tenets of

3. PHASE 3: THE GENE AS A KEY TO INHERITANCE

Although Darwin's theory gained immediate support from some scientists, and eventual support from virtually all, one of the ways his explanation fell short was in his understanding of the basis for inheritance. He could not explain how it was that offspring tend to share their parents' characteristics. Through rediscoveries and new developments in genetics and molecular biology during this century, an explanation of the basis for inheritance has been furnished in terms of the *gene*.²²

By far most physical structures that make up any living thing do not persist after the organism dies. Whether a structure persists throughout the life of an individual (like a brain) or whether it is continually replaced by similar or identical structures throughout the course of an organism's existence (like the cells of skin, muscle, bone, etc.), the persistence or replacement is halted at death, if not before. Genes, however, are exceptions. These physical structures are regions of chromosomes, which are found in the nuclei of most kinds of cells, in most living things.²³ Chromosomes are able to duplicate themselves (replicate), which they do on a regular basis. Under normal circumstances, whenever an organism reproduces, either sexually or asexually, parental genes become those of the

evolutionary biology; for example, it does not describe the relationship between change in populations, just described, and the evolution of different kinds of creatures, from the level of species to kingdom. Such explanation is omitted here because it is not immediately relevant.

²²The relevance of the gene to evolution is roughly introduced by the classic works Fisher (1930) and Haldane (1932); but is more explicit in such works as Haldane (1955); Waddington (1957); Hamilton (1964); and G. Williams (1966). Later works on the subject are Hull (1981); R. Dawkins (1976); (1982); and Maynard Smith (1988), ch.7, 13. There is debate over whether the gene is the *only* basis for natural selection (for other ideas see Wynne-Edwards (1962); and the very different R. Dawkins (1976), ch.11. Brandon and Burian, eds. (1987) is a collection of essays regarding this controversy). However, there is widespread agreement that the gene is generally the most significant basis in nature.

²³Exceptions are bacteria, who do not have nuclei; and viruses, (to those who consider them living).

offspring. In this way, as long as reproduction continues successfully and without any interference or mistakes (which do sometimes happen), an organism's genes will exist forever; or, more accurately, exact copies will continually be produced of each gene transmitted to offspring.

Genes function in an organism by specifying the nature of traits, or characteristics of organisms. In some cases, these traits are specified by the genes in such a way that little variation is allowed in the outcome. For instance, genes specify the structure of certain chemical substances like hormones with such exactitude that in every member of a given species the structure of the hormone is identical. More obviously, normal humans are born with two eyes and two lungs; these traits are specified by genes with great rigidity. In other cases, the genes specify traits which are more variable. For instance, an organism's genes may specify a certain tendency towards aggression.²⁴ Throughout the course of life, however, aggression will be variable because of other considerations, including those particular to the situation and to the individual organism. So, although the content of a badger's genes will cause it to be generally more aggressive than a sheep, there is variability in this disposition. Any given badger is not always aggressive. When it does display aggression, it will not always be to the same extent. Two badgers in the same situation may react with differing levels of aggression. This does not mean that there is no genetic basis for a badger's aggression. Rather, it shows that there is no guarantee that all traits specified by genes will be immune to a range of masking, distorting, encouraging or discouraging influences perhaps related, but very often completely unrelated, to the specific gene(s) that are specifying the particular trait.

When offspring have only one parent, that parent ideally gives an exact copy of all of its own genes to the offspring. The only way in which

²⁴Wilson (1975), ch.11.

the genes of the offspring could be different than that of the parent is for there to be mistakes (mutations) in the replication. However, it is, of course, very common for organisms to reproduce in such a way that two parents, with different genes, are involved. In this situation, an offspring's set of genes (genome) is composed of a combination of that of each parent, barring mutations. The assortment of the parental chromosomes in the formation of an offspring's genome is such that no complete prediction of an offspring's genome is possible. In addition, there are so many ways in which the parental chromosomes can combine, including the occasional exchange of parts of chromosomes, that in the vast majority of creatures the probability of going through the reproductive process twice and producing two offspring with identical genomes is so low as to be practically non-existent. So, genetics provides a mechanism for the inheritance of traits and explains why offspring exhibit variation.

When discussing matters not in terms of individual offspring, but in terms of a group of individuals of a species that live in the same general area (viz., population), this genetic mechanism fills in the gap in Darwin's understanding of how certain traits increase in frequency in a population whereas others decrease in frequency. Such a change in gene frequency in a population is basically evolution, translated into genetic terms. It so happens that no such change would occur were populations always large, mates always chosen at random, mutations very rare, and all individuals regardless of genetic variation equally likely to survive and breed. Nature is not like this, however, and any of these conditions not being met is enough to make gene frequency change, and thus evolution, likely. The robin example cited earlier as an example of natural selection, is an instance of the fourth condition not being met. To restate that example in genetic terms: Robins whose genetic makeup specifies a tendency to lay either too few or too many eggs will tend to die out more quickly than robins whose genetic

makeup specifies a tendency to lay the right number of eggs. As the disadvantaged robins die out, their genetic information dies with them. As the advantaged robins survive, their genetic information is perpetuated. In this way, the portion of a robin's genome which specifies the laying of the right number of eggs will tend to persist in a population of robins.²⁵

Some have nicknamed this aspect of nature the 'survival of the fittest'. In the context of genetically updated evolutionary theory, this term simply refers to the fact that genetic information which specifies a trait harmful to itself tends to decrease in abundance in a population, whereas genetic information which specifies a trait beneficial to itself tends to persist, all other things being equal. Whether a trait is harmful or beneficial will depend on the nature of the organism that bears the genetic information, as well as the nature of the environment, including other organisms and nonliving things. Genetic information persists only in individual organisms; but since what are inherited are the genes, they are the ultimate drivers of evolution. The explanatory power of this idea has prompted the evolutionary biologist John Maynard Smith to claim of his field that 'the most exciting thing to have emerged is what might be called a "gene-centred" view of evolution'.²⁶ This 'gene's-eye view of Darwinism'²⁷ has facilitated an understanding of many previously confusing situations in nature, including the resolution of the so-called 'paradox of altruism', which has led to the particular naturalist meta-ethic which will be discussed in this chapter. First, however, the subdiscipline of evolutionary biology within which the paradox of altruism was encountered will be introduced.

²⁵This assumes that differences in genetic makeup are generally responsible for differences in the numbers of eggs robins lay. David Lack's work does clearly establish this ((1954); (1966)).

²⁶Maynard Smith (1988), 59.

²⁷R. Dawkins (1989a), ix.

B. Sociobiology and the Biological Basis for Altruism

In 1975, Harvard biologist E. O. Wilson wrote *Sociobiology: The New Synthesis*, in which he defined the new field as 'the systematic study of the biological basis of all social behavior'.²⁸ Ironically, whilst a 1989 poll of the international Animal Behaviour Society rated the book the single most important work on animal behaviour of all time, dethroning even Darwin's contributions to the subject, the book also incited what may be 'the only occasion in recent American history on which a scientist was physically attacked, however mildly, simply for the expression of an idea'.²⁹ Some have believed this widely varying but thoroughly zealous reaction to sociobiology to be the inevitable reaction to a current 'paradigm shift' in scientific thought of the sort that Thomas Kuhn spoke about.³⁰ Richard Dawkins, however, who wrote *The Selfish Gene*-- the other of the 'two epoch-marking books that synthesized and publicized' sociobiology³¹-- stressed the scientific precedent for his claims. He expressed his belief that although sociobiology may revolutionise the humanities, its scientific basis had been long understood. In fact, in a significant sense it simply extended themes present in Darwin's own work.³² Whether a paradigm shift in progress or just an overdue realisation of the implications of scientific advancements made long ago, the science of sociobiology is rooted in the concept which was seen to be fundamental to the modern understanding of biological evolution in general: the gene.

²⁸Wilson (1975), 4.

²⁹Wilson (1994), 330, 307-8. At an American Association for the Advancement of Science event in Washington, D.C. in 1978, a group of demonstrators stormed the stage and poured a pitcher of ice water on Wilson's head.

³⁰Kuhn (1962). R. Wright (1994), 6 invokes the Kuhnian phrase in his description of sociobiology, in a section entitled 'A Quiet Revolution'. Wilson (1994), 319-20 says that a 'paradigm shift' was an appropriate description of his own experience as well.

³¹R. Dawkins (1976). Hereafter citations will be from the second edition, (1989a). The quote is from R. Wright (1994), 4.

³²R. Dawkins (1989a), Preface to the 1989 Edition, and p.1.

1. GENES AND BEHAVIOURAL TENDENCIES: CENTRAL ISSUES

Explanation of the science of sociobiology is perhaps best accomplished in the context of four issues, characterised by various extents of controversy, which are an integral part of the science. These issues are the biological continuity between animals and humans, the innate versus the acquired, free will versus determinism, and the adaptationism debate. With respect to each issue sociobiology is predicated on the truth of a certain range of positions, and in each issue the gene plays a central role.

a. *The animal heritage of Homo sapiens*

94% of the text of Wilson's *Sociobiology* deals with the nonhuman animal world.³³ However, his last chapter opens with 'Let us now consider man in the free spirit of natural history...', and proceeds to explain human behaviour in the same terms that were used to explain that of ants, lions, and chimpanzees.³⁴ An argument can be made that this continuity is reasonable from two related perspectives. First, as far as our genes are concerned, there seems no reason to believe that humans should be treated differently in a scientific treatise than any other animal. As the physiologist Jared Diamond points out:

'The genetic distance (1.6%) separating us from pygmy or common chimps is... less than that between two species of gibbons (2.2%), or between such closely related North American bird species as red-eyed vireos and white-eyed vireos (2.9%), or between such closely related and hard-to-distinguish European bird species as willow warblers and chiffchaffs (2.6%). The remaining 98.4% of our genes are just normal chimp genes.'³⁵

³³Wilson (1994), 332.

³⁴Wilson (1975), ch.26.

³⁵Diamond (1991), 19. He then argues that we would be classified by a nonhuman

Genes are the subject matter of sociobiology,³⁶ so it is understandable that Wilson would have stressed a continuity between the sociobiology of humans and that of other animals. The second perspective from which it may be sensible to stress a continuity between humans and other animals is that of evolution. Darwin said 'Man in his arrogance thinks himself a great work... More humble and I think truer to consider him created from animals'.³⁷ Seeing humans as a result of an evolutionary process which also produced many other creatures may be used as a defence of sociobiology's assumption that humans can be understood by the same methods that are used with other animals.

In order for sociobiology to produce accurate results regarding humans, the arguments from these two perspectives (the genetic and the evolutionary) must be valid. To what extent this is the case is a matter for debate,³⁸ but hereafter in this thesis they will be accepted as necessary working assumptions in human sociobiology, and so the basis of the discipline will not be challenged. In the minds of many, this is a too generous allowance,³⁹ but without it any discussion of a sociobiology-based meta-ethic would halt before it had begun. A related issue, which provides just as significant a stipulation for human sociobiology, is the matter of the extent to which the genes are responsible for variation in humans. In the views of some, scientists operating from the genetic perspective have often encroached on the domain of the environmental, or the acquired. This is the second of the issues discussed here as central to sociobiology.

zoologist as a third species of chimpanzee, rather than in a completely different genus. Our close biochemical relationship to the chimps is also described in Pilbeam (1984). Others who stress our kinship with animals include Gould (1980a); Flew (1984); Rachels (1990); Leakey and Lewin (1992); R. Wright (1994); Dennett (1995); and Matt Ridley (1996).

³⁶Wilson (1975), ch. 1; and R. Dawkins (1989a), esp. ch. 1, 4.

³⁷Darwin (1836-44), 300. This quote is from 1838.

³⁸Two ways into the issue are M. Dawkins (1986), ch. 10; and Symons (1992).

³⁹e.g. Sahlins (1976).

b. *Innate versus acquired and the significance of culture*

As long as evolutionary biologists confined their talk to anatomical structures such as fins, thumbs or brains, there was little opposition to the idea that the genes played a crucial role in their evolution.⁴⁰ Since sociobiology deals with social *behaviour*, a novel issue arises: the tendencies towards specific behaviours might also be rooted in environmental influences. In fact, what has been called the 'standard social science model' involves the belief that environmental considerations outweigh innate ones to such a degree as to render the latter insignificant.⁴¹

Moreover, even if an evolutionary origin is postulated for certain behaviours, the means for such an origin does not have to be at all *genetic*. The role of culture has long been recognised as a nongenetic agent of evolutionary change, by a sort of Lamarckian 'inheritance of acquired characteristics' through such things as oral tradition.⁴² Despite the prominence of this view, E. O. Wilson describes the work of sociobiology as follows:

'...each phenomenon is weighed for its adaptive significance and then related to the basic principles of population genetics... The principal goal of a general theory of sociobiology should be an ability to predict features of social organization from a knowledge of these population parameters combined with information on the behavioral

⁴⁰S. Gould (1981), 328-9. By 'brains' is meant here the general size and gross structures; it is realised that on a finer level, one's occupation, for example, may result in actual anatomical changes in the brain (e.g. linguists may develop larger Wernicke's (#44) and Broca's (#22) areas, which are involved in language comprehension and speech respectively).

⁴¹Tooby and Cosmides (1992).

⁴²T. H. Huxley believed that cultural transmission, facilitated by language, was what has made us so different behaviourally from other animals ((1863), 132). This view was also held by Asa Gray ((1880), 103-6). Among the vast literature on the subject of cultural 'inheritance' are James (1890), vol.2, 633-40; J. Baldwin (1897); J. Huxley (1942); Waddington (1960a), 381-402; (1961); Dobzhansky (1963); Cloak (1975); Medawar (1977); Piaget (1978), ch.2; Gould (1978), ch.32; Cavalli-Sforza and Feldman (1981); J. Ball (1984); Boyd and Richerson (1985); R. Dawkins (1989a), ch.11; Durham (1991); Sober (1991); Dennett (1991), ch.7; (1995).

constraints imposed by the genetic constitution of the species.⁴³

So, sociobiology's success as a science depends on the significance of those constraints which the genes place on behaviour. The more behaviour tends to be constrained by genetic information, the more sociobiology will be able to explain that behaviour. The less genetically constrained behaviour tends to be, the less explanatory power sociobiology will have. Wilson, realising this, has attempted with C. J. Lumsden to incorporate cultural influences in the sociobiological view of human nature, still asserting the primacy of the genes.⁴⁴ The efficacy of their attempt has been questioned by many,⁴⁵ but regardless of the truth of their claims it remains the case that it is only to the extent that cultural influences by themselves are *not* the basis for the evolution of social behaviour, that sociobiology can be successful.

This stipulation holds true for human nature as well. It is only to whatever extent human psychology is *not* governed by cultural or other experiences that human sociobiology is a viable discipline. If flexibility, as Wilson's critical colleague Stephen Jay Gould believes, is 'the most important determinant of human consciousness', and if biologically speaking 'We are, as Simone de Beauvoir said, "l'être dont l'être est de n'être pas"-- the being whose essence lies in having no essence,⁴⁶ then sociobiology of humans is fundamentally wrongheaded. On the other hand, if 'the organism is only DNA's way of making more DNA',⁴⁷ if we are 'survival machines-- robot vehicles blindly programmed to preserve the selfish molecules known

⁴³Wilson (1975), 4-5. See also p.21-22, 67.

⁴⁴Lumsden and Wilson (1981); (1983).

⁴⁵In Wilson's own terms, 'those in several key journals were unfavourable: Edmund Leach was enraged in *Nature*; Peter Medawar was contemptuous in the *New York Review of Books*; Richard Lewontin, by his own later description, was nasty in *The Sciences*. The subject of gene-culture coevolution simply languished, mostly ignored by biologists and social scientists alike.' (1994), 352-3. See also Kitcher (1985); S. Gould (1988), ch.7; Maynard Smith (1988), ch.8.

⁴⁶S. Gould (1978), 257, 259.

⁴⁷Wilson (1975), 4.

as genes',⁴⁸ then human sociobiology is the *only* legitimate science of human nature.

There are many intermediate positions available, and all three of the scientists quoted in the last paragraph have at times endorsed or at least opened the way for a more moderate view of the relationship between innate and acquired behavioural traits than may be evident in the quotes above. Wilson in *On Human Nature* does make room for a significant degree of learning within the range of effects specified by the genes.⁴⁹ Dawkins is more accommodating of acquired characteristics, suggesting that learning is so prominent in human culture relative to genetic specification that when speaking of human social behaviour 'we must begin by throwing out the gene as the sole basis of our ideas on evolution'.⁵⁰ From the other direction, Gould, in a (rare) move towards reconciliation with sociobiologists, writes that 'I am willing to admit... our selfish and aggressive urges may have evolved by the Darwinian route of individual advantage' and our 'altruistic tendencies... may have arisen by the same Darwinian route'.⁵¹ Whatever the balance between our experience and our genetic heritage, the stipulation remains that sociobiology's success as a science depends on the degree of significance of the latter factor. That it is significant at all is thus another working assumption of sociobiology that will not be challenged in the examination to follow, although others have seen it as a fatal flaw.⁵²

As a final remark, recent work in genetics and developmental biology shows that the innate/acquired balance is not sufficiently described in terms of opposing percentages of each, as is often popularly believed.⁵³ Sociobiologists talk of genetically-based 'channels of human mental

⁴⁸R. Dawkins (1989a), v.

⁴⁹Wilson (1978), ch.2-3.

⁵⁰R. Dawkins (1989a), 191.

⁵¹S. Gould (1978), 265-6.

⁵²e.g. Sahlins (1976); S. Gould (1981); Lewontin, Rose and Kamin (1984).

⁵³Actually, this was realised by some scientists decades ago: e.g. Lehrman (1953); Schneirla (1956); and Hailman (1967).

development' where 'genes prescribe the *capacity* to develop a certain array of traits', and that array can be narrow or vast.⁵⁴ Learning operates within the bounds instituted by that array, and so on a different level from the function of the genes. Furthermore, studies have shown that during development, information from the environment is intimately related with gene function: 'Each developmental change is influenced by the interaction of genes and environment, and also affects the next stage of this interaction'.⁵⁵ From this perspective, 100% of human behaviour is genetically based (since our channels or capacities for learning are functions of our genes), and 100% is environmentally based (since without any experience those channels or capacities would remain unexploited). This is why such scientists believe the 'acquired' not to be in opposition to the 'innate'; rather, they are 'cooperating partners'.⁵⁶ If this is the correct way of looking at the situation, the innate/acquired balance is not adequately explained simply by attaching percentages to each element. Indispensable to the explanation is the issue of the relative broadness or narrowness of the channels and capacities specified by the genes, and thus the range over which learning can effectively operate. This in turn must be taken together with the intricate interactions which occur during development.⁵⁷ This understanding of the relationship between the innate and the acquired should therefore be understood as sociobiology is presented with the stipulation that genetic considerations be significant in the explanation of behavioural variation in humans.

⁵⁴Wilson (1978), 56. See also Waddington (1957); R. Dawkins (1982), ch.2; and Maynard Smith (1988), ch.9.

⁵⁵Barnett (1988), 114. See also Barnett and Dickson (1984) and references therein.

⁵⁶J. Gould and Marler (1987). See also Bateson (1976); R. Dawkins (1981); M. Dawkins (1986), ch.4; and Ruse (1989), 164-6.

⁵⁷Many works still do use percentages, i.e. Plomin, *et al* (1990); and Loehlin (1992). However, most of them use wording that allows them to accept the co-operation of the innate and acquired described above. Plomin *et al* find that certain behavioural traits will appear in offspring of parents with those traits 40-60% of the time. Loehlin believes that certain behavioural differences between individuals can be traced to genetic differences 30-40% of the time.

c. *Free will vs. determinism*

Regardless of where the balance lies regarding the importance of the environment and the genes to human psychology, one must still deal with the issue of whether and to what extent both of these considerations together constrain our behaviour. Sociobiologists are far from unified, or clear, in their explanation of their positions on this perennial issue, although opponents to sociobiology often characterise them uniformly as 'biological determinists'.⁵⁸ The two most prominent popularisers of sociobiology, Wilson and Dawkins, both vary when describing their positions on this issue, but neither of them can be branded as a strict determinist except on a very selective reading. It is true that both Wilson and Dawkins use metaphorical language that neglects the capacity for individual decisionmaking and leaves no room for opposition to genetically based tendencies. Wilson says of genes that 'the individual organism is only their vehicle, part of an elaborate device to preserve and spread them with the least possible biochemical perturbation'.⁵⁹ Dawkins in the same spirit calls us 'survival machines' and 'robots'.⁶⁰ Vehicles, devices, machines and robots obviously do not have any power to act against the purpose for which they were built by deciding to do so. Nor can they act for ends which they have chosen regardless of their predispositions. These metaphors, therefore, must be seen to have very limited applicability, for both Wilson and Dawkins believe that human beings *can* do those things. Wilson says plainly that 'people have free will and the choice to turn in many directions',⁶¹ and that in cases where we 'are forced to choose among the elements of human nature' but find them irrelevant in today's world, we can

⁵⁸Allen, E., *et al.* (1976); S. Gould (1978), ch. 30, 32; Lewontin, Rose and Kamin (1984).

⁵⁹Wilson (1975), 3.

⁶⁰R. Dawkins (1989a), v, 19-20.

⁶¹Wilson (1994), 332.

break away from them 'through an exercise of will'.⁶² Because of this phenomenon, he is led to postulate that 'individual free will probably will remain forever invulnerable'.⁶³ These statements may be less deterministic than usual for Wilson,⁶⁴ but they exemplify the fact that a variety of positions regarding this issue are possible among sociobiologists. Dawkins uses less deterministic language than Wilson on the whole, repeatedly urging us to rebel against our genetic tendencies: 'We have the power to defy the selfish genes of our birth... we have the power to turn against our creators. We, alone on earth, can rebel against the tyranny of the selfish replicators.'⁶⁵ Although some have found in this a blatant contradiction,⁶⁶ the sociobiologists disagree:

*'I think that Rose and his colleagues are accusing us of eating our cake and having it. Either we must be "genetic determinists" or we believe in "free will"; we cannot have it both ways. But-- and here I presume to speak to Professor Wilson as well as for myself-- it is only in the eyes of Rose and his colleagues that we are "genetic determinists". What they don't understand (apparently, though it is hard to credit) is that it is perfectly possible to hold that genes exert a statistical influence on human behaviour while at the same time believing that this influence can be modified, overridden or reversed by other influences... We, that is our brains, are separate and independent enough from our genes to rebel against them. As already noted, we do so in a small way every time we use contraception. There is no reason why we should not rebel in a large way, too.'*⁶⁷

With this moderate position allowable within sociobiology, there is no need to discuss the free will/determinism issue any further in this context.

Sociobiologists need not be, and the most prominent are not, opposed to the concept of free will. The only stipulation for the operation of sociobiology

⁶²Wilson (1978), 196.

⁶³Wilson (1980), 28.

⁶⁴More deterministic passages are (1975), 3-4; (1978), 167; and (1990), 253.

⁶⁵R. Dawkins (1989a), 201.

⁶⁶Stent (1979); Flew (1984), 118-9; Lewontin, Rose and Kamin (1984).

⁶⁷R. Dawkins (1989a), 331-2.

is that 'free will' cannot be taken to mean the absence of any involuntary tendencies towards certain behaviours. For sociobiology to be a legitimate discipline, there must be predisposition. Free will, when postulated at all, cannot be represented as the abolishment of predisposition, but rather as the possibility that predispositions can be overruled.

d. *Adaptationism*

A fourth issue, and the last to be discussed here, that looms large in discussions of sociobiology, is to what extent psychological/behavioural traits are relevant to survival, such that genetic information specifying a given trait will tend either to proliferate or to decline in a population *because of that relevance*. As this is sometimes phrased, to what extent are these traits 'targets of natural selection'? In Stephen Jay Gould's words, 'Must all features of organisms be viewed as adaptations?'⁶⁸ Darwin realised that he may have begged this question in *The Origin of Species*:

'I had not formerly sufficiently considered the existence of many structures which appear to be, as far as we can judge, neither beneficial nor injurious; and this I believe to be one of the greatest oversights as yet detected in my work.'⁶⁹

Insofar as one believes that features must be viewed as adaptations, one adheres to *adaptationism*.

It has been established, however, that there are other ways in which traits proliferate in a population. One is 'genetic drift',⁷⁰ where the (usually geographic) isolation of a small group can result in a straying of genetic information away from that which was the average in the larger parent population. For instance, if a group of turtles which happened to have a relatively high incidence of a certain heritable feature floated on rafts of

⁶⁸S. Gould (1980a), 16.

⁶⁹Darwin (1871), 152.

⁷⁰S. Wright (1932); (1959); Mayr (1942), 237. Mayr warns against an overuse of this idea, however, in (1982), 555.

debris to an island previously unpopulated with turtles from which they could not escape, over the generations the turtles on that island would continue to have that feature more often than turtles on the mainland, unless of course the feature was harmful to them.

Inbreeding, and breeding in populations where individuals generally breed with close neighbours and rarely move far away, will also cause certain traits to become common in a population without their being adaptive. Another commonly discussed way is by what Darwin called the 'principle of correlation',⁷¹ and what is now split into two variants. *Chromosomal linkage* describes the relationship between genes on a chromosome whereby they tend to be inherited together.⁷² *Pleiotropy* describes the situation where one gene or gene complex affects more than one trait. The commonality between these two concepts is that one trait will regularly accompany another. Darwin noticed 'quite whimsical' examples of this: 'cats with blue eyes are invariably deaf... hairless dogs have imperfect teeth... pigeons with feathered feet have skin between their outer toes'.⁷³ In a case where two traits are specified by a pleiotropic gene, for example, and one is beneficial whereas the other is neutral or even slightly harmful ('slightly' relative to the benefit of the other trait), the latter trait will still tend to proliferate in a population over the generations, because it has 'hitch-hiked' on the advantage bestowed by the former trait.

A concept which, if appropriate to social behaviour, could function as an alternative to adaptationism is what might be called 'multifunctional traits'. Screwdrivers were invented for a particular purpose, but are often used to do such varied tasks as opening paint cans, removing bicycle tyres and bypassing ignition switches. Likewise, some features of organisms

⁷¹Darwin (1871), 130-1, 151.

⁷²Note: This is not always the case; a phenomenon known as 'crossing over' results in chromosomes being split into portions.

⁷³Darwin (1859), 11-12.

which were initially adaptive in one capacity may be exploited in ways completely unrelated to their initial advantage. This is not necessarily a departure from adaptationism, but in the realm of behaviour it often is. One writer has proposed that

'Man's large brain was doubtless developed originally because it was an advantage to him to make and use tools, to reason about environmental conditions, and so on. But the mental capacities that were developed for these purposes could then be used in other ways'.⁷⁴

Social behaviours could be traits which are capable of being exhibited by a brain which had evolved to its present level of complexity on other bases. In this way, social behaviours would be common without being adaptive. On the other hand, both sociobiologists and their critics agree that sociobiological explanations are explanations in terms of a social behaviour's adaptiveness.⁷⁵ Since there are other ways in which these traits may become established in a population besides their being beneficial to survival, the sociobiologist is not immune to scrutiny on this point. No assumption is possible here without begging the question. Each time a sociobiologist claims a social behaviour to have arisen because of its adaptive value, that claim must be accompanied by evidence of that value. Hereafter, this issue will not be raised as long as this stipulation is respected.⁷⁶

Sociobiology, then, is the study of the biological basis of social behaviours, where that basis is explained in terms of the genetic specification of those behaviours. Two working assumptions in the field are

⁷⁴Rachels (1990), 59. This point is often made; e.g. Ayala (1987) and S. Gould (1988), 122.

⁷⁵Wilson (1975), 4, 21-2; Alexander (1979); S. Gould and Lewontin (1979); Trivers (1985); S. Gould (1988), 30-31; Ruse (1989), 161-2

⁷⁶A general discussion about adaptation is M. Dawkins (1986), ch.1. Critical assessment of alternatives to adaptationism is provided more fully in Dobzhansky *et al.* (1977); Lewontin (1978); S. Gould (1980a); Provine (1985); and Cronin (1991), ch.4. Criticism of sociobiological adaptationism can be found in S. Gould and Lewontin (1979); and S. Gould (1988), ch.2, 7.

the continuity between humans and other animals by virtue of our common evolutionary history and genetic makeup; and the significance of the role of genetic makeup relative to that of the environment in shaping social behaviour. Furthermore, sociobiology does not necessitate any kind of determinism of human behaviour. Lastly, although sociobiology is not theoretically constrained to adaptationism, the discipline most often proceeds by explaining traits in terms of their adaptive value.

2. SURVIVAL OF THE ALTRUIST

a. *The paradox of altruism*

The 'central theoretical problem of sociobiology'⁷⁷ is also the problem whose solution has led to the naturalist meta-ethic which will be discussed in this chapter. This problem can be framed in terms of a paradox. Natural selection operates in such a way that organisms with self-destructive genes will not be preserved. An entity is altruistic, biologically speaking, insofar as it 'behaves in such a way as to increase another such entity's welfare at the expense of its own';⁷⁸ therefore, altruism is self-destructive behaviour. The paradox arises as one realises that the natural world is replete with examples of altruism. Ground squirrels give alarm calls which render the one giving the alarm more conspicuous to the predator.⁷⁹ Reed buntings spend inordinate time and energy raising babies of cuckoos.⁸⁰ Dwarf mongooses often baby-sit for nonrelatives.⁸¹ Vampire bats share food in times of shortage.⁸² Wolves exercise restraint in fights with each other.⁸³ Olive baboons and stickleback fish arrange themselves into

⁷⁷Wilson (1975), 3.

⁷⁸R. Dawkins (1989a), 4.

⁷⁹Dunford (1977).

⁸⁰Davies and Brooke (1991).

⁸¹Rood (1978).

⁸²Wilkinson (1984).

⁸³Lorenz (1964), 186-9.

alliances where others will come to the aid of one in trouble.⁸⁴ And, most significantly, humans have that 'peculiar institution'⁸⁵ known as morality, whereby we often feel or think that we ought to do things which place concern for self second to that for others. Given the assumption behind sociobiology that behaviours have arisen because of their adaptive value, and the bias towards self-preservation inherent in natural selection, one would expect altruistic creatures not to persist in nature. Why, then, is this not the case?

b. *Attempted solution: group selection*

Some have thought that an explanation for altruism could lie on a level of natural selection that is other than the genetic. These scientists have thought that 'adaptations could be for the good, not of the individual, but of the group or population or species or some other level higher than the individual'.⁸⁶ Although through the 1960's the view was popular,⁸⁷ other writers have claimed that in most cases it was 'the woolly world view of some early work in ecology that fuelled this episode in Darwinian theory'.⁸⁸ In a search for holism in biological science, ecologists saw no reason to refrain from postulating natural selection on any level of the hierarchy of life: the family, the population, the species, even the biosphere. As the role in evolution of replicating genetic information became clearer to the scientific community, the realisation grew that there was no such replicator at the level of the group, and so it seemed that 'group selection' was not possible. This realisation was fostered by the work of George C. Williams

⁸⁴Packer (1977); Milinski (1987).

⁸⁵A phrase used by B. Williams (1985), ch.10. He does not relate morality to altruism or sociobiology, however. For him the 'peculiarity' is the sense of obligation; here it is the contradiction between morality and natural selection.

⁸⁶Cronin (1991), 275.

⁸⁷E.g. Allee (1938); (1951); Allee *et al* (1949); Emerson (1960); Wynne-Edwards (1962); (1963); (1964).

⁸⁸Cronin (1991), 278.

and David Lack, both of whom wrote in vehement opposition to the group selection theory of V. C. Wynne-Edwards.⁸⁹ This debate has continued into recent years.⁹⁰ The suggestion has been made that 'the assumption that selection almost invariably centres on the individual is crucial to the theories and conclusions of the sociobiologists'.⁹¹ Whether or not this is the case, group selection is not generally a part of sociobiologists' resolutions of the paradox of altruism, and so hereafter it will be ignored.⁹²

c. *Solution part 1: kin selection*

Sociobiologists have not found much difficulty in developing mechanisms for altruism apart from the idea that natural selection might favour a healthy group in its own right. In fact, the hypothesis that a phenomenon known as *kin selection* might be widespread in nature paralleled the realisation that genetic material was the basis for natural selection. The two consecutive papers written in 1964 by William Hamilton which first thoroughly explain this idea have been said to be 'among the most important contributions to social ethology ever written'.⁹³

⁸⁹Williams (1966), esp. 92-124; Lack (1966). See also Maynard Smith (1964).

⁹⁰Wynne-Edwards recanted in 1978. In the words of Richard Dawkins: 'Magnanimous these second thoughts may have been, but unfortunately he has had third ones: his latest book re-recants' (R. Dawkins (1989a), 297). For another group selectionist, see Wade (1976) and (1977), although he criticises prior models of group selection in (1978). Other discussions are Maynard Smith (1976); Hull (1981); Grafen (1984); R. Dawkins (1982), 81-117; (1986), 128-38, 265-9; (1989a), ch.7; Cronin (1991), ch.12.

⁹¹Ruse (1980), 34.

⁹²Part of the problem of group selection stems from two facts: first, some use the term liberally, even to represent levels of selection that ultimately rely on the gene. See, for example, Wilson (1975), ch.5. Second, even ardent anti-group selectionists are beginning to allow for higher-level selection in certain circumstances. For instance, certain groups may be better at evolving than others, which would create a second-order natural selection of groups (R. Dawkins (1989); Cronin (1991), 289-91). Several writers have also noticed that reciprocal altruism (q.v.) brings about distinctiveness in the gene pool of a close-knit group, which would allow for one group to be more likely to persist than another (Mackie (1978); Singer (1981), 19ff; R. Dawkins (1981)).

⁹³Hamilton (1964). The quote is from R. Dawkins (1989a), 90. Among the other places where kin selection is described are: Wilson (1975), ch.5; Singer (1981), ch.1; M. Dawkins (1986), ch.3; R. Dawkins (1989a), ch.6-8; Cronin (1991), ch.11-13; Mark Ridley (1995), ch.10.

The only reason why natural selection as it has been described here tends to preserve one organism over another is because there is a certain advantage to be gained from an organism having a specific genetic makeup. However, in situations where more than one individual have a similar genetic makeup, natural selection can occur as long as *any individual with the relevant genetic makeup gains the advantage*. When a gene is advantageous, it tends to persist in a population in whatever organism possesses that gene. This means that if a parent possesses what in some way is an advantageous genome, that parent's offspring will tend to possess a similarly advantageous genome as well, for offspring possess their parents' genes. The genetic material of a parent who did not take care of its offspring would obviously not survive through the generations, because a crucial way for an organism's genes to persist is in the form of offspring. However, and this is where kin selection becomes relevant, offspring are *not the only way* in which an organism's genes can persist. That organism had parents of its own, and those parents had parents, all sharing genes. At each fork in the family tree, any offspring will share a certain percentage of their genes with each other because they share the same parents. This is why siblings have more similar characteristics than cousins, which have more similar characteristics than second cousins. Theoretically, two siblings could differ completely from each other, if each were bequeathed with entirely different genes from each other. Just as improbably, two siblings might share all of the same genes, and thus not differ at all. Understandably, then, siblings will on average share the mean percentage between these extremes, or 50%, of their genes. Following the mathematics of relationships between more extended kin, nieces and nephews share an average of 25% of their genes with their aunts and uncles; and cousins share an average of 12.5% of their genes with each other. This is the basis for the light-hearted comment of J. B. S. Haldane that he would find it worthwhile to save two siblings or eight

cousins from drowning;⁹⁴ for this many of each kin type would possess, on average, 100% of his genes. So, as far as natural selection is concerned, there is no distinction made between one individual and eight of his cousins.

On this model, natural selection could even favour self-sacrifice. Take, for example, a colony of bees, any of which will die after delivering a sting. An individual protecting the nest is effectively protecting many times its own genes, for all of the members of the colony share genes. If a bee is genetically predisposed to react by fleeing when the nest is attacked, that bee will survive but its nest may not; in which case, many others with that bee's genes who are still in the nest will perish, and with them will perish the genetic predisposition to flee an attack. On the other hand, if a bee stings the attacker of a nest, that bee will die, but the nest will stand a better chance of survival. Since the nest contains so many relatives, and thus so many times the individual's genetic information, the net result is that all of those survivors will live to reproduce, passing along that genetic predisposition to sting an attacker of the nest.

Some have raised the objection at this point that 'fractions are of very rare occurrence in the world's languages... I refrain from comment on the even greater problem of how animals are supposed to figure out' the percentage of genes they share with others.⁹⁵ This is an ill-conceived objection, for there is nothing in the model of kin selection that necessitates that animals *know* the percentage of genes they share with others. The fact of the matter is that if their genes predispose them to save their kin to a certain extent, then they will tend to survive longer than those who do not. The bees need not *actually know* that they share genes, or how much they share; they need only *effectively show* certain behaviours in certain circumstances. Richard Dawkins makes this point:

⁹⁴Haldane (1932); (1955).

⁹⁵Sahlins (1976).

'A snail shell is an exquisite logarithmic spiral, but where does the snail keep its log tables; how indeed does it read them, since the lens in its eye lacks "linguistic support" for calculating m , the coefficient of refraction? How do green plants "figure out" the formula of chlorophyll?'⁹⁶

Still, an organism needs to have some cue that there are kin about, in order to be able to behave differently from when there are not (there would be no evolutionary advantage for a bee to defend a nest that wasn't its own). Such differentiation is made in various ways. Familiar cues for kin among animals include specific odours (cue=I smell someone familiar), specific locations (cue=I am around the home), or specific sounds (cue=I hear familiar buzzes or grunts). The way in which paper wasps determine whether there are kin about is by the detection with their antennae of certain chemicals present on the external surface of others. If these chemicals are removed, a wasp will not be able to distinguish a foreign individual from a nestmate.⁹⁷ When an organism possesses any such means of distinguishing kin from non-kin, kin selection is possible. Much work has been done in determining means of kin recognition, including among humans.⁹⁸

d. *Solution part 2: reciprocal altruism*

Kin selection cannot be the only solution to the paradox of altruism, for many instances of altruism in nature do not involve relatives. The common phrase 'you scratch my back and I'll scratch yours' is often used to characterise the second model which has contributed to a solution of the paradox of altruism; perhaps a more accurate representation would be 'I scratch your back and hope that you'll scratch mine'. Following Haldane's talk of rescuing drowning people, Robert Trivers in 1971 suggested that he

⁹⁶R. Dawkins (1979). Eleven other possible misunderstandings of kin selection are also dealt with in this paper.

⁹⁷Singer and Espel (1992).

⁹⁸Chagnon and Irons, ed. (1979); Fletcher and Michener, ed. (1987); Barnard (1991); Hepper (1991).

would find it worthwhile to rescue a drowning person in the hope that the favour might be returned at some time in the future.⁹⁹ Of course, all of this talk is metaphorical, and refers to the fact that natural selection favours co-operation in certain circumstances. The political scientist Robert Axelrod has most fully developed this theory, along with William Hamilton.¹⁰⁰

It is obvious in certain cases that two individuals would tend to survive more often if they engaged in a programme of mutual aid than if they acted alone, in hunting or defence for example. The question which Trivers, Axelrod and Hamilton attempted to solve, however, is how such co-operation could have evolved, for it seems that the most advantageous situation for an organism's genes would be for that organism to receive aid and then never return the favour. In other words, cheating is more profitable than fairness in co-operation.¹⁰¹ Axelrod found, however, that this would not be the case in social animals, when individuals are likely to meet each other many times throughout their lives and have the opportunity to withdraw help from those who are disposed to cheat. If x cheats y and z , natural selection would favour y , who ceased helping x in the future, over z , who continually gave aid to x without any favours being returned. In this illustration, x is called a 'cheat', y a 'grudger', and z a 'sucker'. Natural selection among those disposed to aid others (i.e., non-cheats) will therefore favour a grudger over a sucker. Moreover, if (and only if) there are enough grudgers about, a cheat will eventually suffer because of a difficulty in finding others to aid him in times of trouble. The grudgers and suckers in

⁹⁹Trivers (1971). See also Trivers (1985), 361-94.

¹⁰⁰Axelrod and Hamilton (1981); Axelrod (1984), esp. 88-105. It is also discussed in Wilson (1975), ch.5; Singer (1981), ch.1; M. Dawkins (1986), ch.3; R. Dawkins (1989a), ch.9, 10; Cronin (1991), ch.11, 14; Mark Ridley (1995), ch.10.

¹⁰¹The analysis that leads to this conclusion has been well-established, thanks to a model often used in game theory known as the Prisoner's Dilemma. In this model, two prisoners awaiting sentence for a jointly committed crime must independently decide whether to confess (cheat) for a lighter sentence, or remain silent (co-operate). If each looks out for his own interest, both will confess rather than co-operate. See, e.g. Gauthier, ed. (1970).

the population, on the other hand, will continue to aid each other (for the grudgers only grudge those who cheat them). Thus, as long as a critical percentage of the co-operators in a population tend to be grudgers rather than suckers when they are cheated, co-operation will be adaptive, and those who do not reciprocate will tend to die out before those who do.

Two issues become important at this point. First, how does a population reach the level of grudgers necessary for reciprocal altruism to work? For otherwise, the cheats will continually dominate the population. Axelrod has postulated several properties which he believes could work towards the establishment of grudging, including a penchant for retaliation against cheats. In addition, kin selection might operate in certain groups until sufficient co-operation occurred for reciprocal altruism to take root. Still another possibility is that a population without reciprocation will not be as successful as one with it, and so a sort of group selection could result in the success of small groups with sufficient grudgers. A second issue is analogous to the kin recognition problem: there must be a way for organisms to recognise fellow reciprocators and avoid cheats. The solution to this problem is also analogous to that of kin recognition. As Helena Cronin writes,

'they don't need a highly developed brain, or any brain at all, to manage this; as we noted with kin selection, any functional equivalent to intelligent discrimination will do. It could be constant contact between two mutually dependent species, such as a hermit crab and its sea-anemone partner. or it could be a unique meeting place, such as the reliable locations adopted by fish that need their parasites removed and those that remove them.'¹⁰²

As social interactions become more advanced, however, and a creature is likely to relate with several others, memory will become more important. If creatures in a community cannot remember whether and which individuals

¹⁰²Cronin (1991), 259.

cheated yesterday, they will not be able to respond appropriately by grudging today. Therefore cheats will flourish and reciprocation will eventually fail in that community.

e. *Solution part 3: manipulated altruism*

Altruism is seen in nature in still other circumstances, where neither relatives nor reciprocation is involved. Neither kin selection nor reciprocal altruism can explain such cases, but a third factor can explain at least some of them: manipulated altruism. Genetic information that specifies behaviour that is advantageous to a certain individual does not have to produce the behaviour *in that individual*. The situation could, on the other hand, be such that a behaviour is elicited in another individual, even of another species. An obvious example is the familiar 'eye-spots' of butterflies, which tend to elicit a behaviour of avoidance in predators who automatically associate large eyes with a large body. A more straightforwardly altruistic example of genetic material in one creature eliciting behaviour in another is that of the cuckoo.¹⁰³ This bird lays its eggs in the nests of other birds, such as the reed bunting. The larger cuckoo baby takes up most of the time and energy of the mother bunting, who attempts frantically to feed it as though it were her own offspring. This is a case of one creature taking advantage (unconsciously, of course) of the drive of the mother to take care of the young in her nest. The bright red throat and the loud calls of the cuckoo are thought to be the factors which allow this manipulator to 'inject its control'¹⁰⁴ into the bunting. Such trickery, or manipulated altruism, will continue in nature as long as the benefits to the manipulator outweigh the costs to the manipulated.¹⁰⁵

¹⁰³Davies and Brooke (1991).

¹⁰⁴R. Dawkins (1982), 227.

¹⁰⁵Manipulated altruism is a favoured subject of Richard Dawkins in *The Extended Phenotype* (1982), 54-5, 67-70, 226-7, 233, 247. It is also discussed in M. Dawkins (1986), ch.3; Cronin (1991), 261-4.

3. THE NATURE OF BIOLOGICAL ALTRUISM

Although other models may explain other ways in which altruism could persist in nature, these three examples are the most commonly cited.¹⁰⁶ A simple and fundamental fact of evolutionary biology is that genetic information which is responsible for behaviours will tend not to survive if those behaviours are a net liability to that genetic information (this is the point of Dawkins's claim that genes are 'selfish'). The mistaken belief that this fact about *genetic information* can be equally well said about *the organism exhibiting the behaviour* has led to the so-called 'paradox of altruism'. On the contrary, the kin selection and manipulated altruism models show that although a specific piece of genetic information may flourish because of a certain behaviour, the particular organism performing the behaviour may suffer, or even die, as a result. Another mistaken belief that contributes to the notion of a 'paradox of altruism' is that the benefits which behaviours facilitate must be *immediate*. The reciprocal altruism model shows that when creatures act in a sufficiently close relationship with each other, benefits of behaviours can often come later in the future; and, the genetic information which specifies such behaviours will persist over the generations because of those delayed benefits.

The definition for 'altruism' as it has been discussed here is, again, behaviour of one organism that 'increase[s] another such entity's welfare at the expense of its own'.¹⁰⁷ A conventional dictionary definition of altruism, on the other hand, might read, 'unselfish regard for or devotion to the welfare of others'.¹⁰⁸ A crucial distinction between the two definitions

¹⁰⁶Another concept which might partially explain the persistence of altruism in nature is 'heterozygote superiority'. This controversial idea is described in Thompson, ed. (1995), 33-35.

¹⁰⁷R. Dawkins (1989a), 4.

¹⁰⁸*Webster's New Collegiate Dictionary*, 1980 ed.

reflects a distinction between the biological notion of 'altruism' and the concept as it is often used in ordinary language. This distinction is between *effect* and *intention*. The biological concept of 'altruism' refers solely to the effect of a certain kind of behaviour, regardless of any intentions. When a bee, reed bunting, vampire bat, olive baboon, or human exhibits behaviour that expends energy or puts itself at risk whilst at the same time aiding another creature, such conditions are both necessary and sufficient for calling such behaviour altruistic, and the organism an altruist, in the biological sense. A human x , for instance, pushes an innocent someone else y from the pavement onto the street, intending for y to be hit by a bus. In actuality this does not happen, but in the process y escapes a mad driver who careers down the pavement and collides with x . If altruism is defined only in terms of the effect, as it is in sociobiology, x is an altruist. Such 'effective altruism', however, clearly contrasts with the 'intentional altruism' of the conventional definition. Given x 's intentions, he could hardly be called 'devoted to the welfare of others'. 'Intentional altruism' requires devotion on the part of the individual to the cause of the welfare of others. Assuming that an intentional altruist could speak, he should be able to say with honesty 'I know that this action I am performing benefits someone else, and I am doing it for that reason'. Altruistic behaviour in this conventional sense might, in actuality, benefit oneself as well. However, in order to be altruistic, the *intention* behind the action must be that someone else be benefited, rather than oneself. An action is intentionally altruistic if the person performing it is doing so out of other-regard rather than self-regard.¹⁰⁹ Sociobiology deals not with this kind of altruism, but solely with effective altruism.

¹⁰⁹See Hepburn (1995) for this opposition of altruism to egoism. For other material on (intentional) altruism, see Schweitzer (1965) and T. Nagel (1970).

With this distinction, this overview of sociobiology and its dealings with altruism comes to a close. This introduction to the science was necessary in order to facilitate a proper understanding of a certain claim: that the material summarised above can serve as an empirical basis for a particular meta-ethical theory. That claim has been made and the theory most fully developed by the philosopher of science Michael Ruse. This theory will be described and criticised in the following sections.

C. Sociobiological Meta-ethics: Description

Ever since its publication, Darwin's *Origin of Species* has been seen by many to have considerable philosophical implications. One writer in the late nineteenth century believed 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'.¹¹⁰ In the end of the work Darwin himself vaguely spoke of 'open fields for far more important researches' regarding humans, but referred only to their origin, history, and psychology.¹¹¹ A dozen years later, he was more specific in his beliefs about the relationship between the new evolutionary biology and philosophical topics, especially regarding ethics. Working from his belief that humanity's 'moral sense is fundamentally identical with the social instincts' which in 'man and the lower animals have no doubt been developed by the same steps',¹¹² he briefly sketched an ethical theory he believed to be 'advisable' from the standpoint of evolution: 'to take as the test of morality, the general good or welfare of the community'.¹¹³ His

¹¹⁰Royce (1892), quoted in Flew (1984), 32.

¹¹¹Darwin (1859), 458.

¹¹²Darwin (1871), 97-8.

¹¹³ibid., 98.

contemporary Herbert Spencer had a different idea; namely, that the principle of natural selection should be seen directly as an ethical as well as a biological principle, and so 'good conduct' is defined as 'more evolved conduct'.¹¹⁴ In the one hundred years that followed, several other ideas have arisen as to ways in which evolutionary biology could be used to explain morality and moral principles. Julian Huxley believed that the morality of actions could be judged by their contribution to the progress of evolution in general.¹¹⁵ C. H. Waddington sought moral guidelines more specifically in the process of human evolution.¹¹⁶ All three of these-- Spencer, Huxley, and Waddington-- have been said to be refuted by the arguments provided by David Hume and G. E. Moore which were discussed in the last chapter.¹¹⁷ Whether or not this suggestion is correct (for as has been shown,¹¹⁸ Hume's and Moore's arguments have a specific scope), the most prominent evolutionary ethical theories today tend not to connect so directly the facts of the evolutionary process and the moral values we ascribe to things.¹¹⁹ However, many of them do agree with Waddington's assertion that 'ethics is based on facts of the kind with which science deals'.¹²⁰ By the definition offered earlier,¹²¹ if one accepts this statement then one is an ethical naturalist. If one claims this to be the case not analytically (by virtue of either logic or semantics), but rather as a matter of synthetic fact, then one is a synthetic naturalist.

¹¹⁴Spencer (1879). See also (1892).

¹¹⁵J. Huxley (1953).

¹¹⁶Waddington (1960). These and other evolutionary ethical theories are reviewed in Hofstadter (1959); Russett (1976); Jones (1980); Richards (1987).

¹¹⁷See, e.g. Ayala (1987), 304-7. Certain contemporary arguments against their views have often been viewed as decisive as well. Against Spencer, there is T. Huxley (1894), esp. pp.46-86. Against Julian Huxley and C. H. Waddington there is G. Simpson (1949), and even more to the point, (1969); and Dobzhansky (1962); (1973).

¹¹⁸See ch.II.

¹¹⁹Probably the three most notable contemporary proponents of evolutionary ethics are: R. D. Alexander (1979); (1987); Robert J. Richards (1986); (1987); and Michael Ruse (1986); (1986a); (1989); (1991); (1995). Their prominence is described in such papers as Rottschaeffer and Martinsen (1990), 375-6; and Collier and Stingl (1993).

¹²⁰Waddington (1942), 18.

¹²¹See Introduction, and I.A.

One contemporary philosopher of evolutionary biology, Michael Ruse, firmly stands in this synthetic naturalist camp, and has produced a meta-ethic which he claims to be based on the empirical findings of sociobiology.¹²² These findings, however, do not only include the models for the evolution of biological or effective altruism presented in the last section, but also other claims which do the work of linking that information with the more meta-ethical premises on which Ruse builds his argument. This linkage was provided by the sociobiologist E. O. Wilson.

1. E. O. WILSON AND THE NEW GENEALOGY OF MORALS

The Preface to a recent collection of papers on evolutionary ethics says that 'Two watershed dates in this endeavor are 1859 and 1975'.¹²³ The first, being the publication date of Darwin's *Origin of Species*, is understandable given the efforts of those who were inspired by it and his later works to develop evolutionary theories of ethics. The second date marks the publication of Wilson's *Sociobiology: The New Synthesis*, which has directly contributed to its own legacy of evolutionary approaches to ethics only with very small portions of the first and last of its twenty-six chapters.

Wilson states his vision in the beginning of the book, in a now well-known passage:

'The biologist, who is concerned with questions of physiology and evolutionary history, realizes that self-knowledge is constrained and shaped by the emotional control centers in the hypothalamus and limbic system of the brain. These centers flood our consciousness with all the emotions-- hate, love, guilt, fear, and others-- that are consulted by ethical philosophers who wish to intuit the standards of good and evil. What, we are then compelled to

¹²²Ruse (1984); (1986); (1986a); (1991); (1995), ch.8; Ruse and Wilson (1986).

¹²³Thompson, ed. (1995), ix.

ask, made the hypothalamus and limbic system? They evolved by natural selection. That simple biological statement must be pursued to explain ethics and ethical philosophers, if not epistemology and epistemologists, at all depths.¹²⁴

This explanation, or as he later calls it, 'biologicization',¹²⁵ is described further in several places, such as various points in his treatise *On Human Nature*: 'Human emotional responses and the more general ethical practices based on them have been programmed to a substantial degree by natural selection over thousands of generations.'¹²⁶ This means that 'Morality has no other demonstrable ultimate function' than to be one of the many means 'by which human genetic material has been and will be kept intact'.¹²⁷ Any additional meaning or purpose to morality, unrelated to biological utility, is therefore misconceived. Furthermore, this adaptation is not to the environment of our own day. Rather, our moral decisions are choices on the basis of 'value systems... created in an evolutionary age now long vanished.' As a result, just as the realisation that religious beliefs are an idiosyncratic biological phenomenon means that 'scientists cannot in all honesty serve as priests',¹²⁸ the realisation that morality has a similar origin and purpose means that we have no reason to take seriously the moral pronouncements of the 'merely wise'.¹²⁹ Better ethical guidelines will come from a new belief system, which is different from those which have produced our conventional ethical norms: 'the mythology of scientific materialism'.¹³⁰

Approaching ethics in the spirit of iconoclasm on the basis of the view that morality's origin and purpose is actually the fostering of one's own

¹²⁴Wilson (1975), 3.

¹²⁵Wilson (1975), 562. His discussion of ethics continues to p.564.

¹²⁶Wilson (1978), 6.

¹²⁷ibid., 167.

¹²⁸ibid., 193.

¹²⁹ibid., 7.

¹³⁰ibid., 209. This belief system is described on pp.196-209. His programme for the 'biologicization' of ethics is also discussed in (1980); (1980a); Lumsden and Wilson (1983), 175; Ruse and Wilson (1985); (1986).

interests is nothing new in moral philosophy. The Sophist Callicles, as Plato depicts him, claims conventional morality to be an invention of rulers to keep slaves under their control.¹³¹ Friedrich Nietzsche, in his *Genealogy of Morals*, brings judgement on conventional morality because of its origins in feelings of resentment among the weaker elements of society.¹³² Moreover, Nietzsche seems to presage sociobiology in his claim that since the instincts producing morality are actually 'a self-preservative measure... the cult of altruism is merely a particular form of egoism'.¹³³

Wilson's proposal is importantly different from prior 'genealogies of morals', however. Neither Callicles nor Nietzsche were in a position to offer significant empirical evidence for their beliefs. Wilson, however, only arrived at his position on ethics after considering the scientific evidence for sociobiology and applying its conclusions to humanity, as seemed to him appropriate.¹³⁴ Wilson found his claims to have enough scientific warrant for him, with Michael Ruse, to state confidently that 'ours is an empirical position'.¹³⁵

The precise connection between the facts of sociobiology described earlier and the ethical claims Wilson makes, can be gleaned from the flow of his arguments on the subject. In 'The Morality of the Gene', the telling title of the first chapter of *Sociobiology*, Wilson proceeds directly from discussing moral principles and their origin, to a discussion of the 'central theoretical problem of sociobiology', that of explaining (biological) altruism.¹³⁶ Likewise in *On Human Nature*, a discussion of courageous warriors in battle and other human actions which are claimed to be morally

¹³¹Plato, *Gorgias*, 482-6.

¹³²Nietzsche (1887).

¹³³Nietzsche (1889), no.373.

¹³⁴An autobiographical description of his attaining sociobiology and its human implications is Wilson (1994), ch.16-17.

¹³⁵Ruse and Wilson (1986), 433.

¹³⁶Wilson (1975), 3-5.

praiseworthy leads into an explanation of kin selection.¹³⁷ The transition occurs at a precise point in the discussion, in these two sentences:

'I doubt if any higher animal, such as an eagle or a lion, has ever deserved a Congressional Medal of Honor by the ennobling criteria used in our society. Yet minor altruism does occur frequently, in forms instantly understandable in human terms, and is bestowed not just on offspring but on other members of the species as well.'¹³⁸

It is clear from this statement and others that Wilson is close to Darwin in this regard, believing that the morality of humans is fundamentally a growth from the altruistic behaviour of animals, and therefore can be explained fundamentally in the same terms as that altruistic behaviour.

Wilson's remarks on ethics have been criticised heavily from several directions. Some, whose political ideologies apparently contradict Wilson's claims, have argued on the basis of those ideologies.¹³⁹ This type of criticism will not be discussed here, on the assumption that in order for an allegedly empirical theory *t* to be called into question, either empirical evidence must be applied against *t*, or else it must be shown that the empirical evidence presented for *t* is either false or underdetermines the range of possible consistent theories. In and of themselves, neither the assertion of a political credo nor the demonstration that the credo is inconsistent with *t* does either of these things.¹⁴⁰

Some sociologists have claimed that a cultural relativism rather than the belief in a uniform human morality is the empirically justified view.¹⁴¹

¹³⁷Wilson (1978), 149-153.

¹³⁸*ibid.*, 150.

¹³⁹E.g. Lewontin and Levins (1976); Fisk (1984); Lewontin, Rose and Kamin (1984); Lewontin (1991); S. Gould defends their political objections in several places, e.g. (1978), ch.30, esp. pp.237-9; and (1988), ch.9.

¹⁴⁰This is not meant to suggest that this is all that is attempted or accomplished by the works cited above. Rather, the point is that any arguments against a purportedly empirical theory on the basis of a political view will be ignored hereafter.

¹⁴¹E.g. Sahlin (1976). Lumsden and Wilson (1981) attempts to take into account cultural differences, admitting that 'sociobiology has not taken into proper account... the diversity of cultures' (p.ix).

This criticism will not be discussed here either, but not because this is an invalid area for debate.¹⁴² Rather, the significance of cross-cultural universals follows from a working assumption accepted earlier for the sake of argument, that the genes are significant enough in the formation of human attitudes and behaviours for human sociobiology to be a legitimate discipline.¹⁴³

Others in the years following Wilson's works cited flaws that more specifically relate to the articulation and defence of his view. Peter Singer criticised him for the absence of serious engagement with moral philosophy, and the vagueness and scarcity of his argumentation.¹⁴⁴ Roger Trigg argued that Wilson failed to support adequately his connection between animal altruism and human morality.¹⁴⁵ Philip Kitcher divided Wilson's project of 'biologizing ethics' into four distinct claims, and accused him of equivocation among those claims and a lack of argument for the two most ambitious and controversial of them.¹⁴⁶ Rather than respond to these substantially philosophical arguments alone, Wilson worked with the philosopher Michael Ruse in such a way that at least some of the philosophical shortcomings noticed by the critics could be remedied by the latter's argumentation. After a short period of collaborative effort, Wilson turned to other projects¹⁴⁷ whilst Ruse developed the sociobiology-based meta-ethic in his own way in a series of papers and books.

2. MICHAEL RUSE'S NATURALISM

¹⁴²Notable in the debate over the significance of cross-cultural moral universals is Westermarck's classic (1906), and the opposing view held by Duncker (1939) and Asch (1952). A recent way into the discussion is the collection of papers in *The Monist* 78:1 (January 1995).

¹⁴³See section B.1b.

¹⁴⁴Singer (1981), ch.3.

¹⁴⁵Trigg (1982).

¹⁴⁶Kitcher (1985), 417-34. A more recent restatement is (1994).

¹⁴⁷The fruits of the collaboration are Ruse and Wilson (1985); (1986). Since then Wilson has been best known for his work on biodiversity.

The central purpose of this chapter is to provide an example of a critique of a synthetically naturalistic ethical theory. Although logical and semantic forms of naturalism have been thoroughly criticised with such tools as the 'is-ought gap' and the 'naturalistic fallacy', synthetic naturalists do not claim their theories to be true analytically, that is by logic or the meanings of words, which is the type of justification those tools criticise. Therefore new tools, or at least old tools modified in important ways, need to be developed in order to assess the validity of synthetic naturalism.

In order for this chapter to be successful, then, Michael Ruse's meta-ethic must be shown to be a synthetically naturalistic theory. Ruse describes the naturalism to which he adheres in the beginning of his most recent book, *Evolutionary Naturalism*:

'For me, "naturalism" is something to do with nature, meaning the world of experience, and since the most powerfully successful approach that we have to this world-- the only true approach that we have towards real understanding-- is the method of science, I take a naturalist to be someone who would understand through the methods and results of science... Naturalism for me, therefore, means trying to understand through empirical law. This means that you have got to appeal to experience-- you cannot just think things through *a priori*-- and, without wanting to make this sound altogether too much like the Thirty-nine Articles, I believe that there are certain general rules which people have discovered and perfected to ensure that the understanding through law is as reliable and solid as is possible to fallible mortals, given the scope and limits of what is known at that time.'¹⁴⁸

Among the 'general rules' of which he speaks, one of his personal favourites is

'the attempt to explain as much as possible by as little as possible, especially explanation involving the unification of two or more hitherto disparate areas of understanding

¹⁴⁸Ruse (1995), 1-2.

beneath one or a few high-level hypotheses or established laws.¹⁴⁹

His description of 'naturalism' accords with that used in this thesis; namely, that a particular realm of enquiry is properly understood as dealing only with principles, properties and terms that are accessible to science. Therefore Ruse is a naturalist in a broad philosophical sense. With respect to ethics, he is consistent in his naturalism:

'...the philosopher as naturalist must move beyond the values inherent in science and turn to the broader question of moral and social values... Fortunately, thanks to recent advances in the science, we can now see that it is only by taking an evolutionary approach to human nature that we can hope to solve some of the most pressing questions of traditional ethics.'¹⁵⁰

He goes on to provide detailed support for his 'evolutionary based ethics',¹⁵¹ by which he means an ethics based on the science of evolutionary biology (especially sociobiology) as it has been presented in this chapter.¹⁵² Therefore, he is a naturalist in the ethical sense in particular. That he is a *synthetic* naturalist, rather than a *logical* or *semantic*, is shown by his above rejection of the *a priori*, together with the absence in his work of any claim that moral terms can either be logically derived or defined in terms of nonmoral terms. In fact, he argues against this in several places.¹⁵³ His belief, rather, is that 'on the basis of factual theory about the nature and process of evolution, you can provide a total explanation of morality'.¹⁵⁴ In

¹⁴⁹ibid., 2.

¹⁵⁰ibid., 9.

¹⁵¹ibid.

¹⁵²ibid., Part III.

¹⁵³Ruse (1986), 227-8; (1989), 254; (1991), 501; (1995), 230-1.

¹⁵⁴Ruse (1986a), 256.

the words of Ruse and Wilson, 'The time has come to turn moral philosophy into an applied science'.¹⁵⁵

3. RUSE'S DEFENCE OF ETHICAL SCEPTICISM¹⁵⁶

Although the sociobiological approach to ethics was introduced in terms of E. O. Wilson, and although he worked with Ruse in the beginning stages of the latter's philosophical development of the position, there are important differences between their views. Among these are the degree to which our genes control our behaviour (Ruse claims to be less deterministic than Wilson¹⁵⁷); the issue of whether evolution is progressive (Ruse being more opposed to this than Wilson¹⁵⁸); and, perhaps most significantly, the question of whether ethical imperatives can be derived from our biological nature (Ruse answering in the negative and Wilson in the positive¹⁵⁹). So, although Wilson has worked with Ruse on the support for the linkage between sociobiology and meta-ethics, Ruse's meta-ethic is his alone.

Ruse believes that an attention to morality and to the facts of sociobiology yields an 'error theory'. More specifically, an attention to sociobiological facts provides an explanation of why we believe what we do regarding morality, as well as a basis for the assertion that all of these beliefs are false.

¹⁵⁵Ruse and Wilson (1986), 421. Note: Although this does reveal synthetic naturalism, such a drastic claim is not required by synthetic naturalism; in fact, many synthetic naturalists believe that it is our best science *together with* our best moral philosophy that will produce a proper meta-ethic (e.g. Sturgeon (1988)). The requirement is that the moral philosophy not utilise any principles, properties or terms that cannot also be employed in science.

¹⁵⁶After reading this section and the subsequent critical analysis, Prof. Ruse endorsed this description of his view as indeed his own, and suggested that he be quoted here as saying that 'almost uniquely you seem to have got my position right'. (3 September 1997).

¹⁵⁷Ruse (1995), 158-9.

¹⁵⁸*ibid.*, ch.4 and pp.230-1; c.f. Wilson (1975), e.g. 379, 382.

¹⁵⁹Ruse (1995), 229; c.f. Wilson (1980); (1984).

Morality, on Ruse's view, possesses certain distinguishing characteristics. First among them is the feeling of obligation, or a peculiar emotional draw towards certain things and away from other things. This can be called the prescriptivity of morality.¹⁶⁰ Second is an 'air of objectivity',¹⁶¹ which for Ruse includes the senses that such prescription is universal, or applicable to anyone in a similar situation, and also that the foundations for these claims that are external to the will of the subject, or nonsubjective. These characterisations of morality are not unreasonable, and are regularly cited by meta-ethicists as aspects inherent in morality.¹⁶² It is widely believed that an ethical theory which dispenses with any of these features is to that extent revisionist, and must provide an explanation for why we tend to think the contrary.¹⁶³

Ruse believes that an attention to scientific facts as they are presented in sociobiology can yield an understanding of *why* such prescriptivity, universality and nonsubjectivity are a part of moral judgement, as well as a realisation that these features are actually misleading us. His argument proceeds as follows:

P1: Strategies for co-operative behaviours have evolved in certain creatures because of their adaptive value.

P2: Strategies for behaviours which have evolved because of their adaptive value must achieve behaviours.

¹⁶⁰Ruse (1984), 173-4; (1986), 227-30; (1986a), 221-2; (1989), 263-9; (1991), 502-3; (1995), 245; Ruse and Wilson (1986), 431-2.

¹⁶¹Ruse (1984), 190-2; (1986), 235-6; (1986a), 253; (1989), 268-9; (1991), 506-7; (1995), 241; Ruse and Wilson (1986), 431-2. Hereafter only one citation per point will be provided, although each of the most significant points may be found in most or all of these seven sources.

¹⁶²Among those who have argued that one or more of these are inherent in moral judgement are: Moore (1922), ch.10; Prichard (1937), 94-5; Frankena (1973), 100; Mackie (1977), 35, 52; Hare (1981), ch.6; MacIntyre (1981), ch.2; Carson (1984), 26; Smith (1994a), 39-40; Blackburn (1984), 187-9; (1988); (1995).

¹⁶³See II.D.3.

P3: A belief in moral (prescriptive, universal and nonsubjective) guidelines has evolved in humans because it achieves behaviours in line with the co-operative strategy.

P4: It is practically impossible, and at any rate irrelevant, for a belief in moral guidelines to have evolved because of its adaptive value, and at the same time for that belief to be true.

C: Moral guidelines are an (adaptive) illusion, and our belief in them false.

P1: Strategies for co-operative behaviours have evolved in certain creatures because of their adaptive value.

This premise may be called the 'sociobiological foundation', for it is precisely the conclusion of sociobiology. Support for this point has been described in the first half of this chapter, most notably in the work of G. C. Williams, W. D. Hamilton, Robert Trivers, E. O. Wilson, Richard Dawkins, and Robert Axelrod. Ruse argues that sociobiology is not a new paradigm, but is an integral part of Darwinism, and should be accepted together with the more long-standing elements such as natural selection itself.¹⁶⁴ He was convinced of the irrelevance of most criticisms of sociobiology long before he even thought that it was relevant to ethics;¹⁶⁵ and is generally confident that the success of the science will continue, although he states this claim with caution.¹⁶⁶

Regarding the adaptive nature of co-operative behaviour, Ruse claims that

'Behaviour is a function of the genes as sorted by natural selection, and it succeeds and is preserved because it confers adaptive advantage on possessors... Human thought and behaviour-- particularly, human *social* thought and

¹⁶⁴Ruse (1987).

¹⁶⁵Ruse (1979).

¹⁶⁶Ruse (1989), ch.7.

behaviour-- results from and must be related to biologically rooted adaptive advantage'.¹⁶⁷

Therefore, Ruse is a thorough adaptationist. Also, he finds empirical successes in the sociobiology of culture in both directions: behaviours with adaptive value being translated into cultural values (e.g. incest taboos), and cultural values being translated into behaviours with adaptive value (e.g. traditions of paying for brides).¹⁶⁸ With regard to co-operation, he cites both kin selection and reciprocation as strategies which are adaptive and able to produce such behaviour.¹⁶⁹ This behaviour he labels 'altruism' (in quotes), which is a 'technical biological term, and does not necessarily imply conscious free giving and receiving'.¹⁷⁰

P2: Strategies for behaviours which have evolved because of their adaptive value must achieve behaviours.

This is a noncontroversial transitional point. It presents the stipulation that if a behaviour is adaptive, then it is the behaviour which must be elicited in order for the genes specifying such behaviour to be 'naturally selected'. In genetic terms, it is the *phenotype*, or the actual exhibition of the trait specified by genetic information, which enables natural selection to operate. A strategy therefore must include some mechanism, or *vehicle*, by which to ensure that the behaviour will be produced.

¹⁶⁷*ibid.*, 161.

¹⁶⁸*ibid.*, 172-86.

¹⁶⁹Ruse and Wilson (1985); Ruse (1985a), 230-1.

¹⁷⁰Ruse and Wilson (1986), 425.

P3: A belief in moral (prescriptive, universal and nonsubjective) guidelines has evolved in humans because it achieves behaviours in line with the co-operative strategy.

Ruse finds morality to be the fulfilment of the stipulation mentioned in P2 regarding humans. People are not 'unthinking genetic robots';¹⁷¹ so there must be some type of mechanism other than rigid programming which could still ensure that we co-operated with others, but that would be more appropriate for 'conscious, reflective beings'¹⁷² who 'seem to have a dimension of freedom, of flexibility'.¹⁷³ Moreover, it would be so time-consuming to have 'very efficient on-board computers' which make the perfectly adaptive decision every time a social situation arose, that the adaptive value of co-operation would surely be overridden by the adaptive disvalue of the time spent in deliberation. So there are good evolutionary reasons why 'we are not altruists like the ants, nor are we altruists like the mega-brains'.¹⁷⁴

Genetic predisposition of behaviour in humans, on the other hand, is best described as a system of 'epigenetic rules',¹⁷⁵ where the genes specify a 'rough biological map'¹⁷⁶ of generally advantageous strategies, much as modern chess games employ.¹⁷⁷ In answer to the question of 'How does the cooperative strategy present itself to us in our consciousness?' Ruse answers:

'In a word, they are the rules of moral conduct! We think that we ought to do certain things and that we ought not to do other things, because this is our biology's way of making us break from our usual selfish or self-interested attitudes and to get on with the job of co-operating with others. In short,

¹⁷¹ibid.

¹⁷²ibid.

¹⁷³Ruse (1995), 240.

¹⁷⁴ibid.

¹⁷⁵Ruse and Wilson (1986a), 143; see also Lumsden and Wilson (1981).

¹⁷⁶Ruse and Wilson (1986), 427.

¹⁷⁷Ruse (1995), 241. This is a type of 'evolutionarily stable strategy'; see Maynard Smith (1972); (1982); Parker (1984); R. Dawkins (1989), 69-87.

what I am arguing is that in order to make us "altruists" in the metaphorical biological sense, biology has made us altruistic in the literal, moral sense.¹⁷⁸

In support, Ruse cites ethological literature regarding chimpanzees, which display a 'quasi-morality' which seems to be a transitional form between the nonmoral 'altruism' of lower animals and the genuinely moral altruism of humans.¹⁷⁹

The distinguishing features of morality aid in ensuring that we follow our moral feelings, for if we did not have them we would probably ignore moral guidelines when they went against our selfish desires. 'But because they give the illusion of objectivity to morality, they lift us above immediate wants to actions which (unknown to us) ultimately serve our genetic best interests'.¹⁸⁰ More explicitly,

'Unless we think morality is objectively true-- a function of something outside of and higher than ourselves-- it would not work. If I think I should help you when and only when I want to, I shall probably help you relatively infrequently. But, because I think I *ought* to help you-- because I have no choice about my obligation, it being imposed upon me-- I am much more likely, in fact, to help you... Hence, by its very nature, ethics is and has to be something which is, apparently, objective'.¹⁸¹

Therefore, 'morality, or more strictly our belief in morality, is merely an adaptation put in place to further our reproductive ends'.¹⁸² In Ruse's words again:

'We survive and reproduce more efficiently with it than we do without it. In the past, those people who lacked a sense of morality, simply tended to be ostracized and at a disadvantage. So they failed to survive and reproduce as efficiently as those with a sense of morality'.¹⁸³

¹⁷⁸Ruse (1995), 241.

¹⁷⁹De Waal (1982); Goodall (1986).

¹⁸⁰Ruse and Wilson (1986), 427.

¹⁸¹Ruse (1989), 268-9.

¹⁸²Ruse and Wilson (1985), 52.

¹⁸³Ruse (1985a), 231.

This follows from the nature of reciprocal altruism, where one who does not reciprocate is 'grudged' by other reciprocators once they realise that he doesn't 'scratch other's backs'.

None of this implies that morality operates perfectly, for it does not. For one thing, differing religious beliefs as well as other factors have resulted in the fact that 'people in different societies have taken different things to be right and wrong'.¹⁸⁴ Secondly, 'We can certainly do immoral things. We do them all the time.'¹⁸⁵ Morality works despite these imperfections, which are bound to be common in such a 'quick and dirty solution'¹⁸⁶ which avoids the difficulties of either rigid determination or time-consuming perfection.

P4: It is practically impossible, and at any rate irrelevant, for a belief in moral guidelines to have evolved because of its adaptive value, and at the same time for that belief to be true.

If we believe moral guidelines to be true simply because believing this allows us more successfully to survive and reproduce (or, more precisely, because believing this allowed our ancestors to do so), it seems impossible, and anyway irrelevant, for one to make the assertion that moral guidelines really do exist and that we *really ought* to do things that we *have evolved to think we ought* to do. Therefore, we can explain the causes of our moral beliefs, but cannot justify them.¹⁸⁷ There are separate arguments for the impossibility and the irrelevance respectively.

First, evolution does not operate in such a way that particular outcomes are necessary; rather, it 'works in a gerry-building fashion, making do with what it has at hand',¹⁸⁸ and different results would occur if

¹⁸⁴ibid., 233.

¹⁸⁵Ruse (1986), 236.

¹⁸⁶Ruse (1995), 241.

¹⁸⁷Ruse (1984), 185-94; (1986a), 256-8.

¹⁸⁸Ruse (1995), 168.

the history of life were to repeat itself. Progress in evolution of the sort that involves predetermined goals such as human existence and knowledge of moral principles 'is impossible in the world of Darwinism, simply because everything is relativized in the sense that success is the only thing that counts'.¹⁸⁹ However, in believing what our biology attempts to convince us-- that prescriptive, universal, and nonsubjective moral guidelines obtain-- we would be believing that these guidelines have some sort of currency which is independent of our idiosyncratic evolutionary history. On the contrary, the evidence of sociobiology shows us that these guidelines, far from transcending our biology, are actually *the result of our evolving the way we did*. Morality is wholly contingent upon the undirected path of our evolutionary history. An attempt to defend or assert the truth of the claims morality makes upon us thus amounts to a misunderstanding of what morality is all about. This is the basis for the claim that 'the recognition of morality as merely a biological adaptation shows' that 'morality is just an aid to survival and reproduction, and has no being beyond or without this'.¹⁹⁰ Again, 'it is precisely because morality is not necessary and it could have been other than it is-- we might have had no morality at all-- that I want to argue that, in the end, it is all a collective illusion of the genes'.¹⁹¹ In this sense our minds, fashioned by evolution, have deceived us because such a deception benefits our survival.

Second, even if moral guidelines could actually obtain and have some validity over and above our idiosyncratic, 'might-have-happened-otherwise' biological constitution, the truth of moral claims would be completely irrelevant, 'which is surely a contradiction in terms'.¹⁹² This can be illustrated by a thought experiment:

¹⁸⁹ibid., 178.

¹⁹⁰Ruse (1989), 268.

¹⁹¹Ruse (1995), 268.

¹⁹²Ruse (1991), 507.

'Consider two separate worlds, identical except one has an objective morality and the other does not. Humans could have evolved in both worlds, to believe in exactly the same things! The two identical species could share thoughts about right and wrong. To suppose otherwise, that is, to suppose that only the world of objective morality could have humans believing in it, is to suppose an extra-scientific channelling of events-- a channelling which is quite antithetical to modern evolutionism. In short, therefore, in a sense, the objective morality is redundant. Its existence is irrelevant to human thought and action.'¹⁹³

A belief in prescriptive, universal, nonsubjective principles has arisen by biological means, i.e. irrespective of whether any such principles really obtained. It therefore makes no difference whether they do obtain, because we think this way nevertheless. Both worlds, the one with and the one without actual moral principles, are populated by people who are programmed to think a certain way about morality. What the truth of the matter is does not matter, because evolution has created an illusion in our minds and that is all we can know on the subject.

Ruse counters what is probably the immediate objection to this argument, that according to this line of thinking all of our evolved capacities which purport to relate to something objective and actual would be deceiving us in the same way as our capacity to understand moral guidelines. Attempting the same thought experiment above with some other evolved capacities does not yield the same conclusions, however, which shows that those other capacities are not illusory as our moral one is. Imagine two worlds, identical except that there are no predators in one. Would people in both worlds have evolved in such a way that they perceive predators in order to avoid them, if in one of the worlds they do not exist? In the world with predators, it is sensible that people would have evolved to perceive them, for this benefits survival immensely. In the world without

¹⁹³Ruse (1989), 268-9.

predators, however, there is no survival value gained by a person perceiving predators when they do not exist, and so there is no reason to believe that any genes for such an illusion-mongering capacity would ever evolve.

Therefore, although 'our eyes are no less an adaptation than is our normative ethics',¹⁹⁴ healthy eyes are generally to be believed because there is no adaptive value in their informing us of things that do not really exist, whilst there is good adaptive value in their informing us of things that do in fact exist. On the other hand, our capacity to understand moral guidelines is not to be believed because there is good adaptive value in its informing us of morality regardless of whether that information is true-- 'We need it for "altruism"'.¹⁹⁵

D. Sociobiological Meta-ethics: Critique

A synthetically naturalistic theory of meta-ethics can be criticised from two different perspectives. First, since science is said to do the work of justifying the principles, properties and terms involved in such a theory, a critic can focus on the allegedly scientific claims and assess the merits of these as such. Certain assumptions necessary to sociobiology will not be criticised here, as was stated in the description of that science; but several other aspects of Ruse's claims will be criticised from the perspective of science or philosophy of science. Second, since it is moral philosophy with which a synthetically naturalistic theory deals, such a theory is susceptible to criticism from that perspective as well. Such criticism, informed by the work of the last two chapters, will also be offered here. Moreover, results of an appraisal of this one synthetically naturalistic theory may be to some

¹⁹⁴Ruse (1995), 250.

¹⁹⁵ibid., 251.

extent generalisable; and if so, it could contribute to an understanding of whether synthetic naturalism, and even ethical naturalism in general, is an appropriate framework within which to develop an ethical theory.

1. ARGUMENTS FROM THE PERSPECTIVE OF SCIENCE

a. *The nature of the empirical*

After several statements, one of which is that humans are 'deceived by their genes into thinking that there is a disinterested objective morality binding upon them', Ruse and Wilson write (in a paper entitled 'Moral Philosophy as Applied Science') that 'Such are the empirical claims'.¹⁹⁶ Several other times in the paper they assert the nature of their position as empirical.¹⁹⁷ Ruse defines 'empirical' elsewhere as regarding 'the experiences we have of the world about us'.¹⁹⁸ He admits that empirical matters require evidence, and so there is a very good possibility that we may not have enough evidence to settle an empirical matter at any given time. Examples Ruse presents of matters which are not empirically settled are whether the 'epigenetic rules' which govern our behaviour can change in only a few generations, and whether natural selection can occur at the level of the group.¹⁹⁹ These for Ruse are empirical matters which are not yet decided. On the other hand, the illusory nature of objective moral guidelines is an empirical matter which *is*, or is nearly, decided, as is repeatedly claimed in his paper with Wilson. Presumably, then, sufficient experiential evidence has not been established for rapid genetic change or for group selection, but has been established regarding the nature of morality.

¹⁹⁶Ruse and Wilson (1986), 425-6.

¹⁹⁷*ibid.*, 422, 426, 430, 433.

¹⁹⁸Ruse (1985), 200.

¹⁹⁹Ruse (1995), 159; (1980), 34.

The empirical evidence for the illusory nature of moral guidelines should therefore be more significant than that for either of the other two issues. Ruse claims as empirical support the fact that chimpanzees exhibit behaviour which might be interpreted as 'quasi-morality'.²⁰⁰ This piece of evidence is doubtful in its utility, as its relevance for morality depends on the very strict continuity of biological altruism and morality, which is the point to be proven. With respect to *morality*, as opposed to biological altruism, the several defences of his view do not contain any empirical evidence at all, but philosophical description of the particular relationship he believes to exist between altruism and morality, and the mutual exclusivity of contingency and objectivity regarding morality.²⁰¹ The case is put forth with thought experiments regarding parallel worlds and other argumentative devices that are designed not to provide evidence, but to aid one in grasping the central claim and to persuade one of its plausibility. The proposition that morality is merely a vehicle for biological altruism may be very reasonable, and not inconsistent with known facts of evolutionary biology; it may strike many people as an attractive possibility and be capable of strong philosophical support. However, for one who claims to gain understanding only 'through empirical law',²⁰² this cannot be an acceptable ending point, but only a starting point-- a hypothesis to be tested.

In objection, one might ask what kind of empirical evidence is possible in support for the claim that morality is nothing more than a vehicle for effective altruism. It might seem that no matter what evidence is given, someone will be able to object that a question has been begged. In answer to this objection, one need simply agree that this very well might be the case, but it does not decrease the validity of those objections at all. Of course, one can imagine evidence that directly relates to morality in some

²⁰⁰Ruse (1995), 241.

²⁰¹These arguments are taken up in the following subsections.

²⁰²*ibid.*, 2.

way, such as the adaptive nature of moral taboos against incest; but this type of evidence only supports the conclusion that morality makes a contribution to the preservation of our gene pool. It shows that at least some of the things we regard as *good*, are also *good for us* in some sense. Such evidence does not at all support the claim that moral guidelines are *nothing more* than the contribution they make to our preservation. Plato, who is taken by Ruse to be a prime example of a philosopher who erroneously believes in the reality of moral guidelines,²⁰³ would nevertheless have embraced evidence that moral guidelines help us more successfully reproduce, believing as he did that the just man is more healthy, successful, and fulfilled than the unjust.²⁰⁴ So it seems that empirical evidence for morality's being adaptive, if found, would not be evidence for its illusory nature, but only contributes to such a view from a certain perspective of morality, which itself requires empirical evidence if it is to be claimed as empirical fact. Perhaps empirical evidence could be imagined which would contribute to Ruse's claim; but it may also be possible that there is no empirical evidence at all which could establish such a conclusion. If this is true, this would hardly lend support to the empiricist. Rather, it would seem to suggest that the hypothesis is empirically untestable-- that the nature of morality is not strictly an empirical matter. Arguments concerning it may require a significant degree of philosophical penetration beyond the information that is provided by experience. In fact, this extra-empirical discussion is precisely how Ruse defends his point. As this is the case, it can only be misleading to assert that something is an empirical claim when it is not being supported by any empirical evidence. Moreover, since Ruse's naturalism is defined in terms of his commitment to empirical law, doubts as

²⁰³Ruse (1985a), 229.

²⁰⁴This is a central theme of the *Republic*; see especially Bk.IX.

to the empirical nature of his claims raise doubts as to whether he is being consistent when he makes them.²⁰⁵

Perhaps more important than whether Ruse's claims are empirical, is whether they are true. P1 of his argument is its foundation in sociobiology, including the models for effective altruism which were described earlier.²⁰⁶ Since the assumptions necessary to the practice of sociobiology, including that of humans, have been accepted for the sake of argument, this premise will not be challenged. P2 depends only on the way in which natural selection operates, as has also been described earlier;²⁰⁷ so this premise will not be challenged either. Just as crucial to Ruse's argument, however, are P3 (the claim that morality is a vehicle for biological altruism) and P4 (the claim that moral guidelines cannot be both contingent on the evolutionary process and objectively true). These two premises will be dealt with here, first from the perspective of the science.

b. *From 'altruism' to altruism*

The claim of P3 depends on a particular connection between biological, effective altruism, and genuine, intentional altruism. The former was defined earlier as 'behaviour of one organism that increases another's welfare at the expense of its own', and the latter as 'unselfish regard for or devotion to the welfare of others'.²⁰⁸ The former is rooted in the effect of the behaviour, whereas the latter is rooted in the intention. Ruse's contention is that the latter arose as a vehicle for the former: that 'in order to make us "altruists" in the metaphorical biological sense, biology has made

²⁰⁵Again, a synthetic naturalist *need* not make such strong claims. Ruse goes beyond the definition of synthetic naturalism in his declaration of adherence to empirical law and nothing more.

²⁰⁶Section B.2.

²⁰⁷Section A.

²⁰⁸Section B.3.

us altruistic in the literal, moral sense'.²⁰⁹ Furthermore, in order to make us altruists 'in the literal, moral sense', Ruse suggests that guidelines have been manufactured in our minds, guidelines which appear to us to be universal, nonsubjective, and prescribing of certain actions. So, Ruse suggests that effective altruism is the adaptive trait; and that in order to produce this, intentional altruism has evolved; and that the means of producing this is a psychological illusion of objective guidelines.

Aside from the particular nature of our moral beliefs and their relations to intentional altruism, which will be discussed later from the perspective of moral philosophy, the connection made here between the concepts of effective and intentional altruism is worth investigating in its own right. In order for this connection to be made, it cannot be enough to show that *effective altruism* is adaptive to a greater extent than no altruism at all. This may very well be established by current sociobiological theory. In order for Ruse's claim to be considerable as a scientific possibility, *intentional altruism*-- and specifically, a disposition to intentional altruism which comes out of an illusory belief in its universality, prescriptivity and nonsubjectivity-- must be adaptive, as well as biologically possible. This stipulation presents problems at two points. The first is the connection between effective altruism and intentional altruism, and the second is at the connection between intentional altruism and illusory objective guidelines. The former will be discussed here, and the latter in the next subsection.

In order for the first connection to work in the way Ruse suggests, behaviour consistent with effective altruism must be similar enough to that consistent with intentional altruism, that the latter can be an effective vehicle for the former. Any differences in effect may compromise adaptivity. Given the definitions of the two types of altruism, therefore, it is a valid question whether a concept defined in terms of effect and another defined in

²⁰⁹Ruse (1995), 241.

terms of intention could, by some means, be sufficiently equivalent in their results. The answer to this question depends primarily on the *effects of intentional altruism*. If intentional altruism most often brings about effects congruent with the effective altruism predicted by the sociobiological models, then the connection Ruse proposes is strong. Otherwise, it is weak, to the extent that there are effects of intentional altruism which run neutral or even counter to the survival of the genes.

As was described earlier when these terms were defined, it is easily possible for the two types of altruism to go in different directions.²¹⁰ The same behaviour was shown there to be both effectively altruistic and directly contrary to intentional altruism. Likewise, a behaviour can be intentionally altruistic but, through no fault of the altruist's, fail to produce the effect which was intended. Ruse, in claiming intentional altruism to be the vehicle for effective altruism, is depending on the effects being intended by the agents, and on agents being successful in effecting their intentions. Perhaps, all contrary examples aside, in actuality the majority of effects are intended, and the majority of intentions do reach fruition. Even if this is the case, a more significant problem remains.

One of the fundamental points underlying Darwinian evolution is the fact that not every organism born can survive to reproduce.²¹¹ This fact means that competition must be a significant part of the natural order. This has become even clearer upon realisation of the role which genes play in natural selection, because each individual in a sexually reproducing species, barring identical multiple births, carries a different genome. This competition, driven by the fact of limited resources, necessitates that the persistence of the genes in one individual depends, if indirectly, on the demise of others. The models of effective altruism that have been described

²¹⁰In section B.3 there is an example of a person pushing someone else out of a position of danger into safety, but intending to do the opposite.

²¹¹Section A.2.

have arisen within this framework. They have arisen either because co-operation benefits shared genes (kin altruism), because co-operation benefits one's genes in the future (reciprocal altruism), or because one's genes benefit at the expense of another's welfare (manipulated altruism). Ruse does not talk much about the third category, but there is no biological reason why he should not-- parasitism is just as effectively altruistic as the other models. Regardless, based on current empirical evidence, co-operation must fit into one of these models in order to be considered adaptive to a sociobiologist, such as Ruse. These are very specific, although also very common, situations, which in no way contradict the inevitability and significance of competition in nature. Effective altruism, therefore, has definite biological limits, within which it works according to the interests of one's genes.²¹² Outside of these limits, effective altruism runs contrary to these interests, and is therefore anti-adaptive, or 'maladaptive'. The sociobiological models Ruse invokes cannot explain how such behaviour could ever arise in nature.

If *intentional* altruism is expected not to be extremely maladaptive, it cannot operate without bounds that are very much like the bounds to effective altruism. Otherwise, it would obviously be acting in ways detrimental to the probability of their genes' survival. Kin aside, organisms are individuals with evolutionarily significant genetic differences, and co-operative behaviours which do not benefit themselves are likely to be harmful. Even seemingly small disadvantages, such as the time and energy wasted in helping others, could result in a net liability to organisms bearing that genetic information, especially in a primitive situation. The question,

²¹²That x is in the genes' 'interests' should be taken to mean merely that x is a trait which, if one's genes prescribe it, conveys an increase in probability that the relevant gene(s) will survive through the generations. If y is contrary to the genes' 'interests', then y is a trait which, if one's genes prescribe it, conveys a decrease in probability of survival of the relevant gene(s). As with all metaphorical language with respect to genes, it is merely an *effective* 'interest', rather than an intentional interest, which is meant here.

then, is whether we find intentional altruism in humans to have the strict bounds that must exist in order for it to have arisen as a vehicle for an adaptive trait.

Undoubtedly altruism towards family members is very common,²¹³ as predicted by kin selection. Likewise, we are often altruistic to others in a community setting²¹⁴ (recall that reciprocal altruism depends on the capacity to recognise and remember altruists and cheats). Perhaps we also submit to others' manipulation of us when the benefits to others of our doing so outweigh the costs to us, as would be predicted by the manipulated altruism model. As far as the present empirical evidence is concerned, this should be the extent of intentional altruism.²¹⁵ In fact, however, this is only the beginning of the altruistic behaviour found in humans. Many people believe, and at least sometimes act as though they believe, that other human beings, whether in this community or in others, are no less deserving of resources than we are; and yet it is the competition for resources which drives much of evolutionary change. People give large amounts of money to organisations dedicated to the aid of destitute foreigners and even nonhumans, cases which reciprocal altruism could not possibly sanction. Intentional altruism, by definition, is a devotion to the welfare of others. The concept places no bounds on this devotion. Peter Singer is not alone in his belief that 'Taking an objective point of view involves seeing our own interests as no more important than the like interests of anyone else. This yields the principle of equal consideration of the interests of all.'²¹⁶ Such an attitude, and even more significantly any behaviours which may result from it, far from being a vehicle for an adaptive trait, works in direct

²¹³Singer (1981), ch.2.

²¹⁴ibid.

²¹⁵Recall that the type of group selection which sociobiologists accept (see section B.2b) merely tends to reinforce reciprocal altruism in communities, and would not produce altruistic behaviour of a different sort than those already mentioned.

²¹⁶Singer (1981), 151.

opposition to anything that could be considered one's genetic best interest. Arguably, few people if any actually live in such a way that others receive just as much attention from them as they give themselves. However, the very existence of intentional altruism which goes beyond the boundaries of genetic self-interest in its effects, is by itself empirical evidence against the idea that intentional altruism is nothing more than a vehicle for effective altruism. Perhaps some other models will someday be revealed to explain intentional altruism further; but as Ruse claims his theory to be an empirical one, he cannot claim that the evidence, as it is now, is completely in his favour on this point. Intentional altruism by definition, and at least to some extent in practice, recognises no definite boundaries of kinship or community.

c. Achieving altruism: the adaptive value of illusory objective guidelines

In order for Ruse's claim to be true, not only must intentional altruism be restricted in general to the production of effective altruism, but also the physiological/psychological means by which Ruse suggests intentional altruism to be promoted must be able to do the task efficiently. Whilst it is false to suppose that existing traits are the most efficient ones possible,²¹⁷ it is also false to suppose that a less efficient vehicle would arise to replace a more efficient one, all things considered. Furthermore, it is reasonable to suppose that if a vehicle has been found to be effective in the promotion of several behaviours, natural selection may tend to favour its effectiveness in promoting another behaviour as well. Another reasonable supposition is that an untried, more complex and intricate path would be less likely to be 'stumbled upon' by natural selection than a relatively simple adaptation that was equally effective. These suppositions cannot be taken as necessarily true in all cases, but they are reasonable points of departure for

²¹⁷S. Gould and Lewontin (1979).

an enquiry into the adaptive value of a trait. If Ruse is right, intentional altruism should have some adaptive advantage over more primitive vehicles for effective altruism, and it would likely have adaptive advantage over vehicles which have been found or supposed to operate for other behaviours. If no adaptive advantage is found for Ruse's particular model of intentional altruism over these others, there would have been no conceivable reason why the new, complicatedly objectified morality would ever have evolved to replace other vehicles.

i. Comparison with alternatives

Ruse claims (see the beginning of the description of P3) that the vehicle he proposes for effective altruism-- rules of moral conduct-- is more adaptive than two other possible vehicles: rigid mechanical determination, and an involved cost-benefit analysis for every encountered situation. Granted, for the reasons Ruse provides, these two alternatives would not be as adaptive for a human. Despite Ruse's confident conclusion from this, there seems no reason to believe that there is only one possible alternative to these two extreme views. In fact, there are at least two forks in the path from a rejection of these extremes to the concept of rules of moral conduct, each of which provides a range of alternatives. Moreover, these alternatives are not just speculations, as are Ruse's ideas both of the 'mega-brain' and the illusion of objectivity; rather, they are actual vehicles, used in nature today to promote all sorts of behaviours.

The first fork is at the level of the evolutionarily stable strategy. Since John Maynard Smith began testing this idea in the early 1970's, a great amount of work has been done in elucidating strategies for behaviour, many of which fall under neither the rigid determination category nor the mega-brain category.²¹⁸ This work, which has been said to have enjoyed

²¹⁸Early work is Maynard Smith (1972); (1974); (1976). This and other work is

'enormous success' and is called a 'trend in modern evolutionary theory',²¹⁹ provides a mass of alternatives to either extreme. As Richard Dawkins writes, 'A "strategy" is a pre-programmed behavioural policy... An evolutionarily stable strategy or ESS is defined as a strategy which, if most members of a population adopt it, cannot be bettered by an alternative strategy'.²²⁰ When Ruse provides the example of a computerised chess game to support his vehicle, he is in effect describing the principle underlying the ESS: that a policy of when and when not to behave in a certain way, as distinct from a particular behaviour itself, can evolve. 'There could be, say, a set of decisions on when to escalate a fight and when to give up and slink away.'²²¹ Thus, in order to make us effectively altruistic, certain policies could have developed in the proto-human psyche which predisposed them in one of a number of ways. A decision to be altruistic could operate in the same way, for instance, as a squirrel's decision as to when and for how long it is worthwhile to risk predation in order to forage for food, or as a wolf's decision that further conflict with the alpha male is disadvantageous.²²² In other words, strategies can be very flexible, and they need not be entirely new and speculative in order to avoid the maladaptive extremes which Ruse presents as the only alternatives to his view.

The second fork at which many other alternative paths are available besides the illusory objectification of morality is that of the 'epigenetic rules' which E. O. Wilson postulates to be important elements in culture.²²³ Ruse

summarised in (1982). Later work is R. Dawkins (1980); (1982); Parker (1984); Maynard Smith (1988). Summaries are given in R. Dawkins (1989), ch.5; Cronin (1991), ch.3.

²¹⁹Cronin (1991), 70-78.

²²⁰R. Dawkins (1989), 69.

²²¹Cronin (1991), 71.

²²²'Decision' should be taken loosely in this sentence, as the possibility of a certain flexibility of behaviour when a creature is faced with a range of alternatives, governed by the dictates imposed by the stable strategy. No intention is necessarily involved (such strategies are described in relation to scorpions, for example), although it can be.

²²³Lumsden and Wilson (1981); (1983).

endorses these, which he and Wilson describe as 'genetically based processes of development that predispose the individual to adopt one or a few forms of behaviours as opposed to others'.²²⁴ Although these may be considered as a subset of the evolutionarily stable strategy, Wilson most specifically identifies epigenetic rules with humans, and they involve thought, reflection, and in many cases communication and consensus in a population.²²⁵ The study of these rules in a behavioural context is a fledgling science,²²⁶ but there already are many areas in which Wilson and others have found these types of rules to be operative. Examples he provides are

'the peculiarities of color vision, phoneme formation, odor perception, preferred visual designs, and facial expressions used to denote emotions. All are diagnostic of the human species, all part of what must reasonably be called human nature.'²²⁷

None of these are claimed to have produced the sort of psychogenic illusions which Ruse and Wilson suspect our nature to have produced in order to achieve effective altruism. Perhaps we all recognise yellow as a single (indeed, primary) colour, whereas yellowish-green is regarded as in some sense a mixture or transitional colour. Perhaps such a recognition has a genetic basis. But, in order for such recognition, we (or at least most of us) have not had to imagine that there is an objective principle of yellowness which in some way is existent whereas the principle of yellowish-greenness is only derivative from it; much less have we been mesmerised that there is a universal prescription which we all should obey, to believe that yellow is a distinct colour. Phobias, another area of much work in epigenetic rules, are not perpetuated in humans by the manufacture of substantive psychological

²²⁴Ruse and Wilson (1986), 426.

²²⁵*ibid.*, 426-8.

²²⁶*ibid.*, 428.

²²⁷Wilson (1994), 352.

illusions that spiders, heights, or tight spaces are actually something that they are not. Even the most crippled arachnophobe, who is far from the norm, can agree with the world's leading expert on the structure and physiology of spiders. He just has an uncontrollable and irrational fear of them. There seems no reason to suppose, then, that at the level of the epigenetic rule there is only one way in which our genes could consistently achieve a behaviour such as effective altruism. It is not necessary to postulate a radically new, scientifically unprecedented type of mechanism to assure that effective altruism is achieved in a population of humans.

Any number of evolutionarily stable strategies could have been developed other than the conscious, distinctively cultural epigenetic rules which Wilson claims to operate in our minds in the production of behaviours. Or, if epigenetic rules are the way nature did go with regard to effective altruism, there are many options at this level also which could have achieved effective altruism just as well as the production of illusory guidelines has been supposed to do. Nonhuman animals still care for their young, show restraint in fighting, give warning calls, protect each other, remove parasites from each other's heads, and share food. Why we should have to possess a radically different mechanism from these other mammals in order to achieve results of the same general type, requires some explanation beyond a simple contrast of epigenetic rules to the rigid programming of particular behaviours.

If illusory objective guidelines are claimed to have been needed in order to achieve altruism because of the unique complexity and flexibility of humans, this does not by itself provide anything in the way of explanation. A human can be hungry, tired, angry, in love, jealous, impatient, afraid, hurting, desirous, or faced with any number of other situations characterised by the necessity to make a decision and exhibit some type of behaviour. As Ruse says, our genes do not operate in either the rigidly robotic nor the

mega-brain manner to settle these matters. But, neither are we burdened with any illusions with regard to them. Feeding is obviously adaptive, and vehicles (hunger, set eating times) are in place to assure such behaviour in humans, although this behaviour can be and often is overridden by the individual. Vehicles are in place in humans for many other adaptive behaviours as well, such as mating. These may or may not be governed by what Wilson calls 'epigenetic rules', but we certainly do not find ourselves subjected in these cases to the extraordinary illusion-mongering mechanism which is said by Ruse to assure altruistic behaviour.

Furthermore, one cannot say (as Ruse has²²⁸) that it is the peculiarly non-self-regarding nature of altruism which makes moral guidelines the only workable vehicle. This confuses effective and intentional altruism. A person need not even *know* that an act is or is not beneficial to oneself, in order to be predisposed to do it. In fact, in many cases we are disposed to do things which we may very well know could actually jeopardise our personal welfare more than aid it; i.e., some instances of violence. If the sociobiologist's thesis regarding the genetic basis for aggression is accepted for the sake of argument, one may point out many instances where aggression in a particular circumstance is against my *personal* best interest, as opposed to that of my genes. Small-scale fights over trivial matters is a prime example. Our genetic constitution might predispose us to aggression in such cases because it is an evolutionarily stable strategy, and we may never stop to think that appeasing our (or someone else's) angry desires in this instance may not be in any particular person's best interest as an individual. For another example, caring for my young may not be in *my* best interest as an individual, but I do it anyway, even realising that fact, and so do nonhuman creatures without morality. The reason for this is that my intellectual knowledge of what is and is not in my personal interest does not

²²⁸Ruse (1990), 65.

necessarily govern my actions. I may do many things, and *not for moral reasons*, which I know not to be in my interest as an individual organism. In fact, in many of these cases, possibly including both war and the raising of children, it is misleading to characterise our thoughts on the matter as being in any way individualistic, not to mention strictly selfish. One regularly hears of *esprit de corps* in battle, and also of family devotion, and few would claim that such instances are always, or even often, results of a recognition of objective moral guidelines. These examples, and indeed the very foundations of sociobiology, suggest that it is relatively unimportant whether creatures realise something to be in their *individual* interests or not. Their biology never has difficulty in predisposing them to behave in other ways; especially, those ways which are consistent with their *genes'* interests.

Confusion on this matter could stem from the fact that *intentional* altruism is to some extent distinctive because of its requirement that we be intentionally other-regarding; but whether we are intentionally altruistic is irrelevant from the perspective of the gene. As far as the genes are concerned, *effective* altruism is the object. Effective altruism can be achieved by the same mechanisms as any other genetically predisposed behaviour is achieved. Whether we know, or care, whether it is in our best interests is nowhere near an insuperable obstacle to genetic predisposition. Although Ruse shows in several places a recognition of the difference between effective and intentional altruism, at this point in his defence he regularly blurs the distinction. For example, he claims that 'Struggle and selection obviously incline one towards selfishness', and so in order to perform actions in the interests of some other individual 'we need an extra push... obligation'.²²⁹ This confuses effective and intentional types of selfishness. Struggle and selection undoubtedly maximise effective

²²⁹Ruse (1990), 65.

'selfishness', in the sense that most of our actions happen to benefit ourselves. This is understandable, given the fact that our interests often coincide with the 'interests' of the genes within us, and sociobiology predicts that we tend to do what is in the interests of our genetic information. However, there is no substantiation, and much evidence to the contrary, that such genetically-based, effective 'selfishness' should be translated into the type of *intentional* selfishness which Ruse claims us to have to overcome in order to produce *effectively* altruistic behaviour. Intentional selfishness, if defined in terms of our beliefs about what is in our personal best interest, is often overridden by other factors, as in violence and the raising of children. If, on the other hand, intentional selfishness is defined in terms of whatever desires we happen to have, then it is clear that we can have desires not only in accord with our personal best interest, but also against it, as these cases suggest. In some cases (though not all-- take drug abuse, for example) these desires are in our *genetic* best interest, and on this level effective altruism is just as 'selfish' as any other behaviour. No radically new, inordinately complex or otherwise extraordinary mechanism is necessary to prescribe such a behaviour relative to others.

To sum up, some type of vehicle or mechanism is necessary in order to achieve behaviours which are effectively altruistic. But, we need such mechanisms in any case of behavioural predisposition. Effective altruism is in no special place in this respect, and has no unique requirements to be achieved. We need to be altruistic in the same sense as we need to raise our children, to eat, to assert our position in relevant hierarchies, to defend our community, and to do many other things. Insofar as we are disposed to do these things by our genes, we are disposed regardless of whether they do our individual person any benefit, and so effective altruism places no unique requirements on our biology in order to be achieved. Furthermore, there are at least two levels, one common to all animal life and one common to all

human behaviour, on which mechanisms exist for behavioural predisposition. These satisfy the conditions Ruse presents for predisposition in humans just as well as he supposes his own idea to do. In fact, they may be said to be more likely as vehicles than Ruse's idea of illusory objective guidelines. In addition to being actually operative in nature rather than purely speculative, they are much simpler. Also, they do not present a radically different solution to what is in fact a very common type of requirement in nature, in humans as well as in other organisms: the requirement that an organism exhibit certain behaviours in certain circumstances, and yet be flexible enough to alter or restrain those behaviours as those circumstances necessitate.

ii. Internal problems

In addition to being unlikely relative to other mechanisms for the promotion of behaviours, for the reasons given above, the concept of illusory moral guidelines is also beset with internal difficulties which affect its usefulness in this regard. One of these is what may be called the 'situation-action lag'. This represents that period between the perception of a situation and the exhibition of the adaptive behaviour. In instances where this gap is wide (such as when a rabbit is confused by a fast-approaching car and cannot decide which way to flee), there is a definite disadvantage present. If gap is narrower (such as in the strike of a frog's tongue at a passing fly), an advantage is conveyed instead. With respect to moral guidelines, relative to other behaviours, an argument can be made that this lag is significant. The breadth of the gap is because of the reflection and deliberation which accompanies the making of moral decisions. The more such thought is necessary to the practice of morality, the wider the gap becomes and the less adaptive the mechanism. It is therefore understandable why Ruse says that 'too heavy an emphasis on thought in morality worries

me'.²³⁰ One might reasonably ask the question whether a simpler, more straightforward desire to perform certain behaviours might be more adaptive than the time-consuming, often confusing and sometimes agonising deliberative capacity that we have now. If morality arose as an adaptation, its efficiency is dubious when one looks at the history of moral philosophy, which is characterised by millenia of this capacity challenging and often bewildering humans. Similar obstacles to efficient and consistent action do not seem to plague other behavioural traits, traits which (as was defended in the last subsection) do not seem to be relevantly different from effective altruism.

Another stipulation for the usefulness of this mechanism is the relative infrequency of situations where people do not do what is in accordance with those objective guidelines. As Francisco Ayala has written, even if our biological nature predisposes actions in accordance with certain principles, 'it does not constrain us to accept them, nor to behave according to them.'²³¹ Consequently, the problem that Euripides mentioned is widely known: 'we know and see what is right, yet fail to carry it out'.²³² In order for Ruse's proposed mechanism to work, the majority of people in the majority of cases must be intentionally altruistic insofar as it contributes to effective altruism. Whether this is the case is an empirical matter, so this is a fruitful area for discussion among sociologists, psychologists and moral philosophers.

d. *Contingent/objective dichotomy*

The above subsections criticise, from a generally scientific perspective, P3 of Ruse's reasoning: the claim that illusory objective guidelines have arisen as a vehicle for effective altruism. How this claim

²³⁰Ruse (1995), 266.

²³¹Ayala (1987), 312.

²³²*Hippolytus*, 39.

squares with the content and scope of morality will be taken up in the more ethically-based half of the critique. Here the next premise of Ruse's argument will be examined: P4, or the claim that there are serious implications to the idea that morality might not have come about at all.²³³ Since morality is *contingent* on the particular evolutionary history of our species, Ruse claims that it cannot therefore be *objective*, which for him means relating to something above and beyond our biology. In the moral case, this objectivity is the basis for the prescriptivity, universality and nonsubjectivity we attribute to moral principles. If this dichotomy between contingency and objectivity does not hold, Ruse's P4 would likewise not hold, for according to Ruse it is the contingency of morality that leads him to propose that its objectivity is illusory.²³⁴

Ruse does admit that the dichotomy does not hold for all things. Our ability to see is contingent on our particular history, but no one would claim that this provides any reason for thinking that a predator has no objective status. So, the dichotomy Ruse perceives between the contingency and objectivity of morality cannot be inherent in the concepts of contingency and objectivity themselves. Rather, a particular difference between the moral capacity and perception must be the factor which justifies this belief regarding morality.

Ruse claims this particular difference to be the adaptive value to be gained by perception versus the lack of adaptive value of a genuinely objective morality over and above the illusory moral guidelines we have now.²³⁵ This is an improper use of the adaptationist principle, however. As was shown earlier, even if a trait is genetically predisposed, there are

²³³This raises the perennial issue in evolutionary biology and physics of the nature of chance. Monod (1972) is a classic work on this issue; responses to it are in J. Lewis, ed. (1974). Some later discussions are S. Gould (1980); Davies (1982); Prigogine and Stengers (1984); Gleick (1987); Stewart (1989).

²³⁴Ruse (1995), 268.

²³⁵*ibid.*, 250-1.

several ways besides being adaptive in which it can arise and persist in a population.²³⁶ Although often criticised for this, sociobiologists often work on the basis of assumptions, backed with varying degrees of evidence, that traits are adaptive. Sometimes their efforts are rewarded, and traits which were previously thought not to be adaptive are shown to be so.²³⁷

However, although traits regularly have adaptive value, and although assumptions to this effect are commonly made in evolutionary biology, this is no licence for someone to make the assumption that if something is *not* adaptive, it cannot exist. A belief that actual moral guidelines are not more adaptive than an illusion of their actuality, even if true, does not justify a denial of the actuality of moral guidelines. If moral guidelines are actual rather than an illusion, they are so regardless of whether they contribute any differently to our evolutionary success than an illusion of their actuality does. In short, there is no necessity that moral guidelines in and of themselves be adaptive at all; so, of course, there is no necessity that they be adaptive over and above the adaptivity of our belief in them. Moreover, the belief that something is not adaptive is a belief that no evidence is available for its adaptivity. It is not a claim that such evidence is theoretically impossible. This is the very source of the strength of the adaptationist's position. Anything claimed not to be adaptive could theoretically at any time be shown by additional empirical evidence to be adaptive.

Incidentally, the very fact of Michael Ruse making arguments for the illusory nature of moral guidelines, if believed, undermines our genetic 'push' towards altruism, and so seems to suggest that actual moral guidelines would indeed be adaptive relative to an illusion of such guidelines. If we see moral guidelines as an illusion, there seems no reason to believe that we

²³⁶Section B.1d.

²³⁷Cronin (1991), 94-5.

will still follow them. If this is true, the advantage to be gained from the illusion would be lost. On the other hand, if this is false, and we would still follow them, then the illusion of moral guidelines was not necessary in the first place! If Ruse believes that morality can operate just as well when we have seen the light, i.e. when we know there to be no objective guidelines, then his main thesis that 'human beings function better if they are deceived by their genes...' ²³⁸ is undermined. On the other hand, if we do function better to any extent when deceived, the conclusion is inevitable that if our corporate illusion is shown to be such, altruism will decline, and our gene pool will suffer for it. However, if Ruse's theory were shown to be false, and people could still honestly believe in actual moral guidelines, altruism would not be affected, and so the benefit to be gained by that behaviour would continue. Therefore, the very possibility of Ruse making the claims he is making, is evidence for the adaptivity of actual moral guidelines above and beyond the adaptivity of an illusion of those guidelines. The reason for this is that an illusion can be discovered, whereas the real thing will stand up to any investigation. This is not an argument for morality having arisen because of its adaptive value, nor for the actuality of moral guidelines. Rather, it demonstrates that Ruse's claim that moral guidelines are not adaptive whereas sight is adaptive is not a fruitful way to achieve an important difference between them (a difference necessary in order for Ruse to claim that things we see can be objective whilst things we morally believe are not). First, moral guidelines can exist without being adaptive. Second, one cannot dogmatise that actual moral guidelines cannot be adaptive in and of themselves. In fact, there is good reason to suspect that actual moral guidelines would be adaptive over and above the adaptivity of an illusion of their actuality, thanks to Ruse's own theorising.

²³⁸Ruse and Wilson (1986), 425.

This argument suggests that an analogy is still possible between moral beliefs and such things as perception, only to the extent that both of them might make claims about something which is above and beyond our biology (i.e. objective in Ruse's sense), whilst our capacities for them are contingent on the evolutionary process.²³⁹ Arguments that the analogy cannot hold, beg questions against morality being truly objective in the sense that Ruse believes we falsely think them to be. In order not to beg the question either way, one must recognise the possibility that the contingent capacity of morality can, but also might not, reflect something universal, prescriptive and nonsubjective. A discussion from the scientific perspective is therefore not sufficient to establish a conclusion either way. One must take moral philosophy into consideration.

2. ARGUMENTS FROM THE PERSPECTIVE OF MORAL PHILOSOPHY

a. *History and justification: the genetic fallacy*

Naturalists, as represented in this thesis, have tried in three general ways to approach the problem of supporting their meta-ethical views. Avoiding the problems of the logical and semantic approaches has led many, including Ruse, to adopt a more synthetic approach, where scientific facts lead one to a naturalistic view of ethics. One is misguided, then, in employing Hume's Law or Moore's 'naturalistic fallacy', as they stand, against such views. In Ruse's case, the scientific facts used are sociobiological facts, and the proposed view of ethics is a meta-ethical

²³⁹Another analogy that might be made is to the truths of mathematics. Although mathematical knowledge is contingent on the evolutionary process, probably no one would claim that mathematical principles are nonobjective in the sense that Ruse claims moral principles to be. The counterargument and rebuttal offered above regarding perception pertain equally well to mathematics.

scepticism or nihilism.²⁴⁰ The sociobiological facts specifically regard the origin and growth of moral thinking, and this provides the supposed connection to meta-ethics. Ruse feels that a proper understanding of the *history* of our moral beliefs will yield a conclusion regarding the *justification* of our moral beliefs-- namely, the conclusion that no justification is possible at all.²⁴¹ Several writers have declared a fallacy to be present in this move. James Rachels conducts the following thought experiment to illustrate this:

'Imagine that someone proposed eliminating the study of mathematics, and replacing it with the systematic study of the biological basis for mathematical thinking. They might argue that, after all, our mathematical beliefs are the products of our brains working in different ways, and an evolutionary account might explain why we developed the mathematical capacities we have. Thus 'mathobiology' could replace mathematics. Why would this proposal sound so strange? It is not because our mathematical capacities have no biological basis; nor is it because it would not be interesting to know more about that basis. Rather, the proposal is strange because mathematics is an autonomous subject with its own internal standards of proof and discovery.'²⁴²

There are many examples of such criticism, some variations of which employ the term 'genetic fallacy'.²⁴³

This argument may be true, strictly speaking, but one should understand the reason why Ruse has remained unimpressed by the accusation. The history of how one came to a belief may not *logically* rule out the possibility that the belief is correct, but it may nevertheless shed light on the validity of our reasons for believing it. Few would disagree that if a certain belief were injected into our minds by an evil genius, and if we came

²⁴⁰Ruse (1989), 250 calls his view 'moral nihilism'; (1991), 507 calls it 'ethical scepticism'.

²⁴¹'Justification' here, of course, does not mean justifying the mere fact that we have these beliefs, but justifying the truth of the content of those beliefs.

²⁴²Rachels (1990), 78-9.

²⁴³Dennett (1995), 470. Ruse (1995), 270-1 says that this is the most common argument levelled against him.

to be aware of this, then we should have reason to doubt whether we were ever justified in believing what we did. That belief may very well be true, but an evil genius might just as easily place a false belief in our heads. If Ruse is right, that our beliefs were manufactured by our psychology in order to make us altruistic, we may likewise have reason to question the truth of the content of those beliefs. The possibility remains that our beliefs are true. But if a false belief aids our survival, from Ruse's perspective there seems no barrier to such a belief propagating in our population, however unsavoury the idea might be to us. Therefore, two of moral philosophy's most popular exports to the philosophy of evolutionary biology, the 'naturalistic fallacy' and the 'genetic fallacy', are unlikely by themselves to stop the scepticism which Ruse claims to be unavoidable because of sociobiology. Insofar as these 'quick fixes' are the extent to which one delves into moral philosophy, one may certainly expect many naturalist theories to be refuted by them, but Ruse's theory is not likely to be among them. From the perspective of moral philosophy, Ruse's theory is more appropriately examined by looking at the way he characterises morality, than by attempting to find a fallacy in his progression from matters of history to those of justification.

b. *From biologically sound altruism to morality: normative discrepancies*

P3 of Ruse's reasoning, that morality is a tool for the production of behaviour that is adaptive by the theories of kin selection and reciprocal altruism, is actually three premises in one:

1. Intentional altruism has been developed as a vehicle for effective altruism.
2. Universal, prescriptive and nonsubjective guidelines have been put in place in our minds to ensure this intentional altruism.

3. Such intentional altruism ensured by universal, prescriptive and nonsubjective principles is what defines morality.

The focus of the argumentation so far regarding P3 has been twofold. First, one should doubt the happy congruence that is claimed to exist between the effects of intentional altruism, and effective altruism as predicted by sociobiology (this criticises subpremise 1).²⁴⁴ Second, it is very doubtful that universal, prescriptive and nonsubjective guidelines are, or would ever be, the way we would evolve to exhibit effectively altruistic behaviour (this criticises subpremise 2).²⁴⁵ The plausibility for these two subpremises depends on assumptions which are either unwarranted or confused. Here the third of these subpremises, the most explicitly ethical of them, will be criticised. Is the picture one that bears sufficient resemblance to our experience of morality to lend plausibility to Ruse's theory? Let us suppose that intentional altruism produced effects which on the whole were in line with effective altruism as predicted by sociobiological theory. Let us suppose also that universal, prescriptive and nonsubjective guidelines were the biological tool by which such behaviour were assured. The question then arises as to whether the scheme thus constructed is like the scheme of our moral experience. One way to test this is to compare the normative principles that arise from the schemes.

There is certainly overlap at the normative level between the two schemes; indeed, such overlap provides a degree of plausibility that must have sparked the imaginations of such thinkers as Wilson and Ruse to believe that the schemes were in fact identical. Regarding kin selection, it is safe to assume that humans do feel on the whole that contributing to the welfare of family is a morally praiseworthy, even obligatory, function. We

²⁴⁴This is the argument of section D.1b.

²⁴⁵This is the argument of section D.1c.

may look with genuine moral disapproval upon those who allow their children to live dangerously or unhealthily. We may certainly feel, as early sociobiologists predicted, a moral obligation to risk our own welfare to save aunts, uncles, cousins, brothers, sisters and other family members who are in danger. Reciprocal altruism takes into consideration much more of what we consider morality to be about. We should attempt to save from drowning not only those who are related to us, but anyone. Of course, in the early days of humanity those one found drowning were likely to be members of one's own community or communities nearby. However, the same impulses that initially resulted in reciprocation within these close-knit groups are now possibly leading us to be altruistic towards those we do not even know. Morally speaking, many others besides our relatives should be considered 'our brothers and sisters'. In fact, our altruism towards others may not benefit our genes only from *those individuals'* likelihood of paying us back, but also because of the better reputation we might get in the community as an altruist, which would pay us dividends if we were ever to be in trouble. In addition, one is more likely to produce offspring if one can impress a mate; and in a community where reciprocation is respected, a mate will surely look for a person with honourable and altruistic tendencies, among other qualities. We may look upon people with those tendencies with moral approval, and those without such tendencies we may morally condemn. Thus, insofar as morality breeds co-operation, mutual caring, and sacrifice on each other's behalf, morality seems to be in line with the predictions of sociobiology. There are, however, serious discrepancies between the two schemes on the normative level. Just a few of these are described here for examples.

i. The moral considerability of the nonaltruistic

'Cheats', sociobiologically speaking,²⁴⁶ are not those who actively do things which are detrimental to the welfare of others. They are not murderers, thieves, kidnappers, terrorists, or rapists-- or, if they are, they are not called cheats because of this, but because of something else. Cheats are those who, although helped when they need it, do not help others back. A chimpanzee who, having been cleaned of parasites by another, is presented with the other's back in a plea to return the favour but promptly walks away from the scene, is a cheat. A cheat is defined for the 'good' he has *not* done, rather than for the 'evil' he has done.

Sociobiology predicts that cheats must not be treated with the same respect and altruism as other altruists, or else reciprocal altruism will fail because there is no benefit to being an altruist and plenty to being a cheat.²⁴⁷ Thus the entire edifice of biological altruism, insofar as it depends on reciprocation, depends on the exclusion of cheats from the category of 'those whom I must help'. If one is a 'sucker'-- that is, if one helps those who do not help back-- then one is doomed to biological failure when faced with cheats. The only hope is to be a 'grudger', who can distinguish between those who return favours and those who do not, and to mete out one's aid accordingly. The problem arises when one translates this into moral language. Morality, to be in tune with biological altruism, must exclude cheats from the realm of moral considerability. Prohibitions against stealing, murder, rape, blackmail and slander should be seen as only regarding those who are altruists or family members. One might object that it is an evolutionarily stable strategy not to murder at all; for if one is psychologically able to murder cheats, one might more easily murder noncheats with whom one has a disagreement. But this must be weighed

²⁴⁶The same, strictly biological, sense of the word 'cheat' and its cognates is meant throughout this section.

²⁴⁷This is discussed and referenced in section B.2d.

against the strict and vital necessity to keep the level of cheats in the population low, and the just as vital necessity to withhold beneficence from them. Evolutionarily speaking, it is advantageous for the success of biological altruism in a society to retaliate against those who are cheats, just for the mere fact that they are not altruistic.²⁴⁸ This would ensure the maintenance of the reciprocating community by keeping the levels of cheats in the population low.

In modern society, such behaviour would surely be morally offensive. To disregard people morally, or even to retaliate against them, merely for their failure to help in our time of need, may be a common emotional reaction, but few would morally sanction such behaviour. We may very well have a psychological constitution that predisposes us to search for cheats,²⁴⁹ but it seems that our actions regarding them are subject to the same moral constraints as our actions regarding anyone else. The equal moral considerability of all people, regardless of whether they are morally upstanding themselves, is a fundamental principle of most moral philosophies, and arguably all prominent modern ones. This does not necessarily mean that we have equal moral responsibilities towards everyone at any given time, but to say that their omission of altruistic behaviour towards us gives us licence for morally disregarding them is a claim that is not often found in moral philosophy or moral teachings. Few if any moral philosophers include any reference to one's actions, not to mention omissions, in their assessment of the moral worth of a human being or our responsibilities to a person in a particular situation. The reason why variables such as x or A are so often used in moral philosophy to represent people is precisely because *the identity of the person in a situation is not of significant moral relevance*. Saving an altruist from drowning is a morally

²⁴⁸Axelrod (1984) discusses retaliation against cheats as an adaptive strategy.

²⁴⁹See, for example, the psychological data provided by Leda Cosmides (1989); see also Cosmides and Tooby (1989).

praiseworthy action; but before morality is therefore linked with biological altruism, one should realise that saving a cheat from drowning is morally praiseworthy as well. If biological altruism were the root of our morality, we should be morally untarnished if we were to sit on the pier and have a picnic as the cheat drowns, provided he is not related to us.

One might recognise some type of difference between the rescuing of the altruist and the rescuing of the cheat, but this cannot be a significantly *moral* difference. In both cases a human being, with frailties and strengths in all areas including the moral, is in danger of losing life. There most probably is a *psychological* difference between rescuing the one and the other, in light of the fact that the first is morally upstanding whereas the second is known not to care about others who are drowning. It may be much easier for us to help the one rather than the other. Why, though, should a difference in one's psychological ease in rescuing two people translate into a difference in the moral status of the rescue? In fact, in some philosophies such as Kant's, the saving of the life of the cheat would even be more morally praiseworthy, for Kant wrote that 'the moral worth of the character is brought out which is incomparably the highest of all' when a person 'is beneficent, not from inclination, but from duty'.²⁵⁰ Surely, in line with reciprocal altruism, our *inclination* is to help those who are altruists themselves. Such an inclination is evolutionarily sound. To do as Ruse has done, however, and claim that this inclination is by itself the dictate of *morality*, is grossly to mischaracterise the nature of morality. Roger Trigg claims reciprocal altruism's guidelines for the treatment of cheats to be a 'prime example of how dangerous the reduction of human morality to kin and reciprocal altruism really is'.²⁵¹ In addition to its danger, it is simply a mischaracterisation of what morality is like. One does

²⁵⁰Kant (1785), I.15. This is not intended to endorse his position or assume its truth.

²⁵¹Trigg (1982), 120.

not need to be a follower of Socrates or Jesus²⁵² to understand that however much we may dislike certain people, our moral responsibilities towards them are not significantly affected by our beliefs as to whether they have treated, or would treat, us in a similar way in a similar situation. This is, however, an inherent and absolutely indispensable part of an ethical theory which sees morality as a tool for biological altruism. One cannot object, moreover, that we should just disobey *those* motives in favour of our more altruistic ones in general. The very capacity for making such a moral claim is what Ruse is saying has proceeded from biological altruism. If we say that this tool can be put to immoral uses, then we are speaking from outside of biological altruism, and our moral codes must be coming from somewhere else.

ii. The moral considerability of those unable to reciprocate

On Ruse's characterisation of morality, there are several classes of entities which are not morally considerable; in other words, we have no moral responsibilities as touching those entities. Among these are all entities which are not closely related to us²⁵³ and are not reciprocating members of our human society, for none of the models for altruism which have been discussed can account for any moral responsibilities that we have to distantly related or unrelated entities which do not pay us back for our troubles. Already having been discussed are those people who are not altruistic because they lack the corresponding genetic disposition, or else they just choose to go against their altruistic motives in favour of other motives; these are 'cheats'. Also in the category of 'morally unconsiderable' are those who, for one reason or another, are not able to reciprocate altruistic

²⁵²These are the two moral teachers castigated by John Mackie (1978) for having perpetuated the moral considerability of immoral people.

²⁵³Recall how quickly kin selection dissipates as individuals become more distantly related. It is significant regarding immediate family, but even first cousins share only 12.5% of one's distinctive genes. It would take 8 cousins simultaneously in a needy situation to outweigh the adaptive value of (biological) egoism on the basis of kin selection.

actions. If the permanently infirm, the incapacitated elderly, the mentally retarded, the insane, and the permanently imprisoned are not able, even if they wished, to reciprocate, natural selection would not favour altruistic behaviour towards them. Aid given to such people wastes time for they cannot return it, and those whose genes prescribe such aid will suffer a net loss of precious energy for nothing in those situations. In biological terms, energy is the stuff of survival. In times of stress or competition, those who spend their time taking care of the permanently infirm or incapacitated are not likely to survive over those who are burdened with no such obligations. Ruse, who emphasises the reciprocal nature of the altruism that has led to the origin of morality,²⁵⁴ must deal with the fact that our society is not completely made up of reciprocating members.

To say that such individuals are not appropriate for moral consideration, or are only appropriate insofar as our actions towards them have emotional consequences on others in our society, runs contrary to the normative guidelines of many, perhaps most, people. Although some might be tempted to view people in life imprisonment or in the final debilitating stages of cancer as morally worthless, or solely as means to the emotional ends of others, such is arguably not the usual moral position to take on the issue in a civilised society. Probably most people would regard a nonchalant onlooker to the drowning of a person with a relatively severe Down's Syndrome as failing to live up to one's moral responsibilities regarding *that person*, not merely to others in the society; in fact, it would seem irrelevant to wonder whether any other people in society care about or even know the individual. The fact that such a person cannot reciprocate such or other beneficence, means that in evolutionary terms it is disadvantageous to waste any energy in the attempt to save that individual. In moral terms, on the other hand, the situation seems very different.

²⁵⁴Ruse and Wilson (1986), 426; Ruse (1995), 273.

One might object that it is an evolutionarily stable strategy to be altruistic to all members of a society (excluding cheats), for those who do not return the favour because of a lack of ability are not going to be very frequent. This is confused, however, for there is no evolutionarily significant difference between cheats and those who are unable to reciprocate for whatever reason. As far as biology is concerned, both types of individual do not reciprocate. Whether this is because of a lack of genetic disposition towards altruism, or a failure for any reason to live up to that disposition, is irrelevant. Altruism provided to such individuals is not returned, and so natural selection should favour a genetic disposition to withdraw altruism from those individuals. Any evolutionary strategy which advocated altruism in general would advocate it towards those with life sentences, the permanently bedridden, the terminally ill, and the mentally incoherent, but would also advocate altruism to cheats. Such would spell disaster for reciprocation, for cheats would then prosper and the altruistic strategy would eventually collapse. To claim that a strategy would ever develop any mechanism to distinguish between cheats and those unable to reciprocate for other reasons, requires that there be something particular about the latter group which can aid the reproductive potential of their benefactors. But the distinctiveness of that group is that they have nothing to give, and so no mechanism would ever develop to separate them from the more straightforward cheats.

Other entities which are nonreciprocating and thus outside of the realm of moral considerability on Ruse's view of morality, are any entities other than *Homo sapiens*. Ruse admits this, claiming that

'Morality is the creation of the genes to help us get on with our fellows, not to help us get on with physical creation. As such, we should not expect to find, as indeed we do not find,

that morality has any existence beyond the relationships between individuals.'²⁵⁵

Of course, many views of moral responsibility regarding animals or the environment claim such to be a deduction from strictly human ethics. This might be called *anthropocentrism* in ethics. Although this issue will not be explored here, it is sufficient to bring up the fact that this is debated, and many believe the nature of our moral responsibilities regarding nonhuman entities to be of a sort that is not anthropocentric; i.e., that a natural entity besides a human can be a 'primary target for an ethic'.²⁵⁶

iii. The moral considerability of oneself

On Ruse's conception of morality, what one does to oneself is morally irrelevant. If altruism is the defining characteristic of morality, then attention to oneself is actually the antithesis of moral action. This is another implication from his denial 'that morality has any existence beyond the relationships between individuals'.²⁵⁷ If it were to have any such existence, such as in the care of one's own mind and body, it would be beyond the scope of Ruse's theory to explain it. In order to incorporate it, he would have to postulate that our biology has invented objective guidelines regarding our treatment of ourselves as well as that of others. By so doing, however, he would have to back down on two positions which are major points in his thesis. First, he would have to admit that morality is not limited to the interrelationships among human individuals. Once this barrier is down, however, there is no reason to believe that nothing else could possibly reside within the pale of human morality and moral consideration.

²⁵⁵Ruse (1995), 290-1.

²⁵⁶Rolston (1988), 1. The rest of the book is a defence of this view. A few of the other works which advocate a nonanthropocentric ethic are Leopold (1949); Singer (1975); Taylor (1986); Callicott (1989); Naess (1989); Attfield (1991). A debate closely related to this is whether there is 'intrinsic value' in nature or natural entities besides humans. An introduction to this discussion is the collection of articles in *The Monist* 75:2 (April 1992).

²⁵⁷Ruse (1995), 291.

His theory would be reduced to one of a number of ways in which we are biologically motivated to perform certain actions we call 'moral' for some other reason. Second, he would have to redefine 'moral' as something other than 'other-regarding'. Once this is done, however, the identity he proposes between altruism and morality will be broken; and if morality is larger than altruism in this way, it might be larger than altruism in other ways as well. The *nothing but* will have been removed from the thesis that 'morality is nothing but a vehicle for biological altruism'. Denial is therefore vital to his thesis.

Whether this accords with moral experience is another matter. Ruse has been criticised on the grounds that 'Self-regarding behavior need not be either amoral or immoral',²⁵⁸ and this does seem to accord with the bulk of the history of moral philosophy. Plato claims that justice, a fundamental ethical term, consists in the harmony of the different aspects within a person.²⁵⁹ Aristotle concentrates on the happiness of the moral agent as an ethical end.²⁶⁰ The Stoics preach that one should aim for one's own serenity.²⁶¹ Joseph Butler pointed out two facets of morality: the private and the public good, the former having to do with oneself.²⁶² Kant's practical imperative was: 'So act as to treat humanity, whether in thine own person or in that of any other, in every case as an end withal, never as means only'.²⁶³ Nietzsche spoke of a 'creative egoism'.²⁶⁴ G. E. Moore claimed that one of the greatest ethical goods was one's own contemplation of beauty.²⁶⁵ The list by no means stops here, for anyone who finds normative guidelines to have something to do with the nature of humanity,

²⁵⁸Rottschaefter and Martinsen (1990), 380.

²⁵⁹*Republic*, IV.443c-e.

²⁶⁰*Nicomachean Ethics*, I.

²⁶¹Epictetus, *The Discourses*, IV.ch.3.

²⁶²Butler (1726), I.27-32.

²⁶³Kant (1785), II.47.

²⁶⁴Nietzsche (1889), no. 373.

²⁶⁵Moore (1903), ch.6.

will of course find oneself to possess that nature just as much as another. Ruse himself even speaks briefly of duties to oneself,²⁶⁶ but as has been noted by other critics, he 'does not seem to recognize its significance for the issues of the nature of moral sentiments and the content of morality'.²⁶⁷

iv. The content of sociability

In addition to the various classes of entities which are not rendered moral considerability on Ruse's view, there are other types of normative discrepancies even with regard to those whom Ruse does admit within the scope of morality. These discrepancies have to do with the particular guidelines that would be sanctioned for sociability as determined by the models for biological altruism. As another evolutionist has noted, if what is morally right is held to be a certain subset of those actions that 'achieve biological gain (because that is, in their view, why the moral sense evolved at all)' then this type of morality 'would justify social attitudes that many of us (sociobiologists included) would judge morally obtuse and even heinous'.²⁶⁸ To take a few examples: The rich are more likely to be able to reciprocate than the poor, so it seems likely that natural selection would favour those who developed a greater moral regard for the wealthy than for the impoverished. One's stepchildren or adopted children, not bearing anywhere near the same percentage of one's genes as a biological child, would not be entitled morally to the same treatment and preference given to other children, for such derives from kin selection; rather, one's moral responsibility to such children is the same as that to any other close member of the community, as reciprocal altruism would suggest. Natural selection would select for an individual who was able to determine correctly whether his reputation as an altruist was at stake in a specific situation; such an

²⁶⁶Ruse (1986a), 217.

²⁶⁷Rottschaeffer and Martinsen (1990), 380.

²⁶⁸Ayala (1987), 316.

evolutionarily refined person would not feel, and would therefore not have, any moral obligation to help someone who could not possibly discover his lack of altruism in a certain situation. Reciprocal altruism suggests that people who 'turn the other cheek', or repay evil with good, are deplorable, for those people are responsible for the success of cheats and they thus endanger the success of reciprocation in the community; natural selection would favour retaliation against such people in the name of morality, just as we should retaliate against the cheats themselves.

Other questionable moral guidelines exist, but these are enough to show that a translation of biologically adaptive altruism both leaves out many moral principles which are widely regarded as binding, and claims many principles to be moral which are widely regarded as appallingly immoral. Moreover, it is not merely the specific normative rules given by a sociobiological conception of morality that are severely misaligned with the nature of morality as most often conceived. The more fundamental, meta-ethical explanation of what morality is and what moral guidelines are like requires similarly focused critique.

c. From biologically sound altruism to morality: meta-ethical issues

Ruse makes several statements about the characteristics of morality which would be considered meta-ethical, some of which have been described already. His claim that morality is prescriptive, universal and nonsubjective will not be criticised, as this description is relatively widespread. Other aspects, however, are more vulnerable to criticism.

i. Contingency of moral principles

It is one thing to say that the capacity we call morality is contingent on the evolutionary process; in other words, that we did not have to be moral creatures. It is, however, entirely different to say that the moral

beliefs we hold are contingent, in the sense that they could be entirely different while we still remained moral beings. Ruse makes both claims: the first has already been accepted but found to licence no conclusions regarding the actuality of that which we believe about morality.²⁶⁹ The second claim requires a more directly ethical argument.

Ruse supports the contingency of our moral beliefs with the argument that if they were not contingent, and if our biology were different, moral codes would be absurd. If we had evolved from creatures that, for example, 'need to eat each other's faeces', some of what we consider to be objective moral guidelines would make no sense.²⁷⁰ This, however, places too strict a criterion on the objectivity of morality, a criterion that is not inherent in any of the three words which have been used by Ruse to characterise it (universality, prescriptivity, nonsubjectivity). In order to believe moral truths to be of any reasonably objective nature, there is no stipulation that, with any possible biological constitution, every normative guideline in morality must be exactly the same as it is with our present constitution. Surely, if adultery is wrong, our being able to marry is a necessary condition. Likewise, if killing is wrong, our being living creatures is a necessary condition. The normative guidelines in any ethical code, no matter how robust, depend to some extent on the nature of that organism which they concern. If we had the biology of termites, as Ruse imagines, there would clearly be no prohibition against feeding our children faeces. But as it is, we are not termites, and the normative rules we embrace are therefore different. One does not have to be of any particular philosophical position, naturalist or not, to believe that our moral principles can only exist as they are because we are the way we are.

²⁶⁹This was the argument of section D.1d.

²⁷⁰Ruse (1989), 270.

This does not suggest a relativism about morality. Assuming that a moral creature with a biology different from our own is possible, our normative guidelines, in fact, might be interpreted as applications to our specific human nature of broader principles common to various possible natures. There is nothing in Ruse's argument to contradict the possibility that at a certain level, ethical principles are universal not only to all humans, but also to all possible moral creatures of whatever (hypothetical) biological constitution. In this case, it would only be as we describe the natures of individual moral creatures that these broader principles translate into more relevant guidelines for each type of creature. Therefore, his illustration does not prove anything except the fact that if we had a different biological constitution, we might have different moral principles on the normative level-- a fact that no one need deny. So, Ruse's claim that moral principles are contingent is misleading, as it does not prohibit, nor even promote any degree of scepticism about, the objectivity of morality or the actuality of moral guidelines.

ii. Strict emotivism

Ruse's theory as to the origin of moral guidelines claims that morality is nothing but sentiment, in accordance with Wilson's belief.²⁷¹ This presupposition is not mandated or even hinted by any of the findings of sociobiology or general evolutionary biology that have been discussed here, and yet Ruse and Wilson both adopt the view without much attempt to justify their position. Many philosophers believe emotion to be an important part of morality in some way, but whether morality is solely a matter of

²⁷¹Ruse (1986), 236; Wilson (1975), 3-4.

feelings is a very hotly debated point in moral philosophy,²⁷² and one's position on the matter requires some support. An obvious class of alternatives is some degree of rationalism. Peter Singer makes this point:

'There is an alternative to regarding ethics as no more than the outpouring of our emotions. Ethical judgments may have a rational component. In his zeal to take over ethics, Wilson overlooks this position, held by Socrates, Plato, Aristotle, the Stoics, Aquinas, Kant, Sidgwick, and many other philosophers. The debate over the roles played by reason and emotion in ethics has been at the center of Western ethical philosophy since its beginnings in ancient Greece; yet Wilson assumes without argument that reason has no significant part to play in ethics.'²⁷³

To Ruse and Wilson, one may present the perennial problems that have dogged strict emotivism. For instance, that moral disagreement is possible and susceptible to some degree of rational argument has been identified as something without which a theory cannot possibly be considered ethical.²⁷⁴ Emotivists find it difficult either to incorporate or explain away such aspects of morality. This and other arguments will not be elaborated here. Instead, one point will be mentioned regarding the way Ruse establishes his emotivism and, consequently, his meta-ethical scepticism.

Wilson began the elaboration of sociobiology in his *magnum opus* with the claim that 'The biologist' knows that the work of 'ethical philosophers' is the consultation of emotions.²⁷⁵ It is this presupposition, not defended but assumed from the beginning, which lays the foundation for Wilson's project: to use this realisation, plus sociobiological knowledge, to

²⁷²Smith (1994a), ch. 1. Significant arguments against or alternatives to emotivism in recent decades include T. Nagel (1970); Foot (1972); (1978); Midgley (1981); B. Williams (1981); Korsgaard (1986); Brink (1986), (1989), 39ff.; Hare (1989); (1989a); Wallace (1990); McDowell (1978); (1979); (1995); Dancy (1993); (1995); Blackburn (1995); Lawrence (1995).

²⁷³Singer (1981), 86-7.

²⁷⁴Smith (1994a), 38-9.

²⁷⁵Wilson (1975), 3.

'explain ethics and ethical philosophers... to all depths'.²⁷⁶ Michael Ruse, working from Wilson's results, seeks to use them to determine the nature of morality. As has been repeatedly described here, one of his conclusions is that our morality, no matter how objective it may seem to us, is actually a set of figments of our imagination, genetically-induced hallucinations. They serve a purpose, but not at all like that which we have always thought.

The peculiar thing about this train of reasoning is that the conclusion follows from that first presupposed claim of Wilson's, twenty years before Ruse's most significant elaboration of his ethical theory. Sociobiological ethics has begun and ended with the claim that morality is really subjective, in that it is a matter of emotion on the order of, in Wilson's words, 'hate, love, guilt, fear, and others'. This having been Wilson's springboard, it is strange to see it presented as Ruse's destination. In this light, the conclusion that moral guidelines are subjective and meta-ethically unjustifiable is not surprising, given that this view was already implicit in the raw materials which Ruse used in the construction of his theory. Insofar as he uses Wilson's emotivism-laden view of the connection between biological altruism and morality to begin his case, subjectivism and consequently meta-ethical scepticism are foregone conclusions. A very strange conclusion within the context of Wilson's strict emotivism, perhaps unheard of in moral philosophy, would be that moral guidelines were also justifiable and truly objective in the sense of referring to a moral truth above and beyond our biological constitution. Such would require a peculiar, presumably coincidental match between what we happen to feel for biological reasons, and what is justifiably and objectively right regardless of our biology. Meta-ethical scepticism of the sort Ruse describes, therefore, seems inevitable given his presuppositions. Given this fact, Ruse's uses of

²⁷⁶ibid.

evolutionary theory and models of biological altruism are, to the end of justifying his meta-ethical scepticism, irrelevant.

Moreover, the same sociobiological evidence could be used in a context which does not justify his position at all, if the initial presuppositions about morality are different. If one is already a meta-ethical sceptic, sociobiological data can help one to fill out one's position, as it has in Ruse's case: morality is nothing more than a set of emotional predilections which serve the biological function of assuring that we exhibit certain types of behaviour. However, if one is not a meta-ethical sceptic to begin with, one is not likely to get beyond page 3 of Wilson's *Sociobiology* without insoluble philosophical disagreement. Such a person can accept all of what is presented and documented as the empirical matter of sociobiology,²⁷⁷ but can have a much different view on the meta-ethical significance of kin altruism, reciprocal altruism, and so on. If morality is thought to be not at all like emotions constructed to assure biological altruism (which, if the arguments of the foregoing pages are sound, seems to be the case), then one can agree with everything Ruse and Wilson say about the emotions or psychological tendencies towards biological altruism which have evolved, without assenting to that drastic presupposition/foregone conclusion, that the emotions or tendencies which are being discussed define *morality*.

iii. The illusory nature of meta-ethics (except for Ruse's)

Perhaps the standard type of critical argument offered to any meta-ethical theory is the claim that it mischaracterises central features of morality. Philosophers have understandably begun to employ this familiar strategy in critique of Ruse's theory. He has been criticised, rightly or wrongly, for inadequately accounting for 'the full-fledged moral modalities

²⁷⁷For constraints on the applicability of this term see section D.1a.

of prescriptivity and universality that are associated with the experiences of obligation and duty'.²⁷⁸ He has been said to have neglected the fact that 'impartiality and categorical content are among the defining characteristics of the moral'.²⁷⁹ It has been claimed that he does not recognise the 'importance of the agent's *knowing* and being able to reflect upon the value of his own acts' which is 'a central aspect of ethical conduct being ethical at all',²⁸⁰ or the necessary element to morality of determining 'how the conflicting desires of different individuals are to be adjudicated'.²⁸¹

Whether any of these accusations is meta-ethically well-founded, however, is likely to be viewed by a defender of Ruse's theory as an irrelevancy. The reason for this is that the theory claims meta-ethics itself to be part of the illusion. According to the theory, the universality, prescriptivity, and nonsubjectivity of morality are manufactured by our genes in order to assure certain behaviours. Meta-ethics is the field within which those three features, and presumably others, are discovered and explicated as features of moral experience. Any non-Rusean meta-ethics is therefore the philosophical study of an illusion, or the attempt to elucidate the truth of a matter whose one truth is that all the other 'truths' are merely the result of a genetically-induced hallucinosis. If one wishes to entertain notions of impartiality and categorical content, of knowledge, reflection and disagreement in morality, then Ruse need not refute such claims philosophically. He need only apply one of two general arguments. If the feature at hand would tend to reinforce our likelihood of performing effective altruism (e.g., categorical content), Ruse can claim it to be part of the illusion. On the other hand, if the feature would tend *not* to reinforce our likelihood of performing effective altruism (such as the possibility of moral

²⁷⁸Rottschaeffer and Martinsen (1990), 386.

²⁷⁹Sorell (1991), 166.

²⁸⁰George (1992), 191.

²⁸¹Kitcher (1994), 448-9.

disagreement), Ruse can accept this as well, as merely a feature of the evolutionarily necessary implausibility of his view. There are good evolutionary reasons why we should view Ruse's theory as ridiculous even if it were true. As he says, 'if we recognized morality to be no more than an epiphenomenon of our biology, we would cease to believe in it and stop acting on it.'²⁸² Any features of morality which seem to contradict Ruse's theory are thus actually supporting it, for they can be said to have been developed in order to ensure that we never discover the truth about morality.²⁸³ In his own words, 'Just as the Freudian argues that those who deny his or her explanation thereby confirm it, so the evolutionist argues that those who find his or her explanation implausible support the very point which is being made!'²⁸⁴

The problem with such a dictatorial, 'heads-I-win, tails-you-lose' strategy, is that it elevates beyond the bounds of falsifiability what is intended as a theory to be tested. If a theory includes some means of incorporating any opposition to itself, it has theoretically removed the possibility of being weighed for its merits and found wanting. Although wrong in any theory, the illegitimacy of such a strategy is especially obvious in the context of Ruse's naturalism. He claims that science is the proper realm within which to understand his meta-ethical theory, and that science necessarily requires the operations of 'adjusting, revising, rejecting', among others.²⁸⁵ But, by using the argument above, Ruse is claiming that any attempt at rejection from the perspective of meta-ethics can be incorporated into his theory, and all such objections can therefore be disarmed. His

²⁸²Ruse (1991), 507.

²⁸³This, of course, is shorthand for the actual mechanism: those proto-humans who were able to 'see through' the illusion would not be altruistic, whereas those who had ideas which caused them to be fooled by the illusion would be altruistic. Altruism being adaptive, those who could see through the illusion would tend to decrease in the population relative to the others.

²⁸⁴Ruse (1991), 508.

²⁸⁵Ruse (1995), 166.

theory, under such a conception, is invulnerable from the perspective of meta-ethics. To those who disagree with him about the nature of morality, he has stated: 'All I can say... is that their genes are deceiving them and, as usual, they are doing a good job.'²⁸⁶ This negates any possible meta-ethical argument, but at the expense of his scientific world-view. In maintaining his theory as an invulnerable dogma, which can incorporate attempts at opposition, Ruse has transformed what he intended to be a scientific position into a matter of blind faith. Only by seriously considering meta-ethical arguments can a scientific theory of morality claim to have incorporated meta-ethics. Otherwise, it seems all too convenient, as well as question-begging, for a theorist to claim that all other meta-ethical theories but his own are parts of an elaborate illusion.

As a final note on the illusory nature of meta-ethics, the extent of this illusion must be emphasised. Ruse claims not only that certain genes control our thoughts in certain ways, but that they do so to such an extent and with such elaboration that moral philosophy can proceed for thousands of years within the illusion. This illusion is so complex and has such refinement and depth that hundreds of philosophers can spend their lives expounding on it. Ethics can be approached from the perspective of individual virtues, or from the perspective of an overarching idea. One can concentrate on a property such as goodness which could be attributed to concepts and objects apart from human actions, or on a property such as rightness which is centred on human action. One can discuss morality in terms of rules or consequences; describe its relation to aesthetics or metaphysics or religion; enlarge upon the meaning of moral terms and the function of moral language; and entertain various hypotheses as to the way in which we come to know, decide or distinguish in morality. Moral principles can be applied to the entire range of human endeavours, including

²⁸⁶*ibid.*, 291.

business, law, the environment, medicine, and technology. Ethics is an area which has seen an immense amount of reflection, introspection, and thought in at least the past few millenia. In order for Ruse's theory to be correct, the mechanism for producing such an illusion must be psychologically powerful enough to withstand all of this scrutiny, and the illusion itself must be so intricate and complex that moral philosophers can spend this much energy and time delving through it. Given these gargantuan requirements of the illusion, it seems as though such a theorist has a great responsibility to defend his idea against the history of moral philosophy which stands in opposition to it. This is especially so when, as is the case here, no mechanism nor empirical evidence has been presented for how such an illusion could have come into place or how extensive it is claimed to be.

iv. Comparison with moral experience

All of the claims against Ruse which were mentioned in the beginning of the last argument (iii) have the commonality of comparing the treatment of morality in his work to what the critics believe is properly considered morality. This comparison is reminiscent of G. E. Moore's Open Question Argument, where two terms such as 'good' and 'pleasure' are compared in order to discern whether they are the same concept. Ruse's theory is synthetic, however, and as such it is not liable to the types of criticism that could undermine a semantic theory. However, as was shown towards the end of the last chapter,²⁸⁷ even synthetic theories have been criticised for ignoring what is considered by critics on the basis of moral experience to be the case. To take an extreme example, no one would take Ruse's theory seriously if he had claimed that morality was a physical object made of wood on which people sit. This is true regardless of whether the theory was defended on the basis of the meanings of words, or on the basis

²⁸⁷II.D.3.

of scientific evidence. It might be said that experience, in a very broad sense, speaks too strongly and obviously in opposition to such a claim. Therefore, at least to some extent, this type of criticism of synthetic naturalism does have plausibility. The general question, then, is whether Ruse's characterisation of morality is close enough to experience to warrant consideration as an ethical theory, rather than just a theory of biological altruism or tendencies towards sociability, etc. Merely to state that morality is the same as tendencies towards sociability begs this question, which is no more justifiable than in the case of claiming morality to be the same thing as a chair.

The difficulty with such criticisms, however, is how to determine which of two experiences called 'morality' (the one criticised or the one underlying the critic's position) to accept as the truer account. If, as Ruse believes, there is a proper way to understand morality, and other ways are improper, the question remains as to how to adjudicate between two people's conceptions of it. A feature of synthetic naturalism, unlike semantic, is that one's theory does not have to accord with linguistic convention. In terms of the Open Question Argument, criticism of semantic naturalism could rest on what might be agreed upon as the 'ordinary language conception of morality', an *a priori* claim.²⁸⁸ This would be taken as morality *A*. When criticising an ethical theory, say one that defines morality *B*, one could simply compare *A* and *B*. Insofar as they differ, the Open Question Argument suggests that *B* fails to account for all that is in *A*, and so is refuted as an analytical account of morality. With synthetic naturalism, however, there is no morality *A* that is considered an *a priori* foundation for such criticism. The synthetic naturalist, whether reductive or nonreductive of moral terms, claims that natural science points out a particular ethical

²⁸⁸This, of course, is the ideal situation for analytical philosophers. In reality, things are not as clean: there are serious differences of opinion as to what the 'ordinary language' conception of morality includes. See II.C.4a.

theory, even if some serious moral philosophy is required to elucidate that ethical theory.

One way of assessing synthetically naturalistic theories is by a method analogous to the examination of semantic theories. The Open Question Argument relies on the relation between the meanings of a proposed ethical definition, and the actual meanings of moral terms. Likewise, we can rely in synthetic arguments on the relation between proposed and actual facts or states of affairs. In a way, this is what has been done all along in the critical half of this chapter. First, what Ruse claims to be the facts of science on which he bases his meta-ethic were challenged. Second, what is evidently Ruse's moral experience was compared and contrasted with what many others experience as morality.²⁸⁹

This second mode of critique requires some elaboration. As has already been discussed, there are several discrepancies between morality as Ruse portrays it, and other conceptions of morality held by people. For instance, according to Ruse's morality, certain significant groups such as the immoral and people who are unable to perform altruistic actions, are not morally considerable unless they are family members. Neither non-human entities nor one's own person are appropriate for inclusion in the realm of moral considerability either, except via other people. Prejudice against, perhaps even retaliation towards, certain individuals such as those that do not return kindness and those who forgive wrongdoing rather than hold grudges, is a necessary part of the scheme of morality. Morality, furthermore, is entirely a matter of emotional drives towards certain behaviours, with no possibility for rational discussion or resolution of disagreements. On the other hand, it is very possible, and actually very

²⁸⁹In the following discussion, the term 'moral experience' will be used, and might be thought to imply that we have no choice as to the moral rules we live by. Although this is Ruse's position (Ruse (1989), 269; (1995), 252f), the use of this term is not intended to beg this question.

common, to find people espousing a view of morality which differs from Ruse's on all of these matters.

Take *P* to be a person who disagrees with Ruse on the nature of moral experience in all of the ways mentioned in the last paragraph. In order for *P* to have a reason to think his beliefs as to what morality is all about are an illusion, Ruse's view would have to present an interpretation of *P*'s own experience of morality, rather than that of some experience which is not *P*'s own, or of an experience which is not of morality. The examples above show that Ruse presents a theory that provides an interpretation of experiences *P* does not have (e.g., the experience of finding objective guidelines to adhere only to the relationships between reciprocating members of a society), and so *P* has no reason to take such things as having anything to do with morality. Also, Ruse's theory provides an interpretation of experiences *P* has, but not what *P* would consider *moral* experiences (e.g., the desire to hold grudges against those who do not return kindness), and so *P* has no reason to take those experiences or their interpretation as pertaining to morality either. The lack of reason in both of these cases stems from the fact of *P*'s experience, something which is not adequately reflected in the theory Ruse presents.

This does not mean that any ethical theory *P* might produce is the correct one. *P* could be misinterpreting his experience of morality. *P* could be misunderstanding its significance. As Ruse suggests, *P* could even be living an illusion with respect to it. However, the only way in which *P* could have any reason for believing this, is for a theory to start out by presenting a picture of morality which accords with *P*'s own experience. If Ruse's theory presents a picture of something which does not look much like what *P* experience as morality, *P* has no reason to believe that what Ruse is talking about is morality. Therefore, even if a theory is entirely internally consistent, it can still be rejected as an ethical theory if it presents a view of

morality which does not coincide at the level of basic experience with that which one finds morality to be about. In fact one must, on pain of self-contradiction, reject that theory, or else deny one's experience. This mode of critique is analogous to arguments provided against previous levels of naturalism. Just as Hume's Law claims logical naturalism to represent incorrectly the conventions of logic as many people accept them; and just as the 'naturalistic fallacy' claims semantic naturalism to have used language that fits ill with many people's views of the meanings of words; likewise the present argument is that Michael Ruse's synthetic naturalist theory achieves its ends only by representing moral experience in a way which does not resemble that of many people.

One might suggest that this argumentation is unfair to Ruse, who might be postulating a *correct* view of morality, rather than the view which everyone holds now. It may be that all of those people whose experience is incongruent with Ruse's description of it are simply wrong. This might be a worthy defence of other views, but not that of Ruse. The reason is that Ruse is attempting a *descriptive* account of morality. He is not preaching to us as to what we ought to take as morally right and wrong. He is claiming that we already do have views of right and wrong, and he is explaining, with sociobiology, why we believe the way we do. We hold our genes in common, and so we should hold our moral experience in common, for our moral experience (Ruse claims) flows from our genetic code. Any discord between Ruse and others as to the nature of moral experience is a piece of evidence against the notion that Ruse's theory is an description and explanation of human moral experience. He is definitely describing *something*, but whether that something is morality depends on what one takes morality to be. If, as Ruse believes, we have no choice about our moral experience because it is part of our biology, then his theory is false because it fails to describe adequately certain aspects of what people do

indeed experience as part of morality. If, on the other hand, we are unconstrained by our biology enough to have some ability to choose our moral precepts, then there is no assurance that we will happen to choose moral precepts in line with the theory Ruse presents. Therefore, whether one is a determinist about moral experience does not matter: Ruse's theory does not work either way.

E. Conclusions

Synthetically naturalistic ethical theories describe morality within the confines of what science says about the world. In order to be able to assess the merits of such theories, one must attend to both the science and the moral philosophy which are involved. Attention to science is required in order to determine whether the factual claims that are the foundation for the theory are both accurate and adequate. Attention to moral philosophy is required to the extent that the ethical theory makes descriptive claims regarding the nature of moral experience or the way in which people regard morality. In this chapter such attention was given to the science and moral philosophy involved in one such ethical theory: Michael Ruse's 'evolutionary naturalism'.

An examination of the scientific basis for Ruse's claims provides great insight into both their accuracy and their adequacy. Evolutionary biology, particularly as combined with modern genetical theory, has provided a solid foundation for the more recent discipline of sociobiology. Sociobiology is in some sense a particular application of evolutionary theory, but it breaks new ground and therefore encounters new problems. Certain empirical matters have not been definitively settled in the young science even apart from human morality, although some are basic

assumptions necessary to its practice. Examples of these assumptions are: the continuity between nonhumans and humans such that empirical evidence gathered primarily from the latter can be applied to the former; the insignificance of both culture and choice relative to the genes in shaping psychological/behavioural traits; the existence of answers in terms of adaptive value to questions of how traits have become widespread in a population; and the relative insignificance of group selection except in special circumstances which are ultimately based on conventional natural selection facilitated by the replication of genetic information. These assumptions have varying degrees of empirical support at the present time, and all have been subjects of varying degrees of debate in recent years. If, as has been granted for the sake of this chapter's argument, these assumptions are correct to a sufficient extent for sociobiology to be a workable discipline, such evolutionary explanations of biological altruism as kin selection, reciprocation, and manipulation are appropriate and well-supported.

More significant problems arise as such information regarding biological altruism is applied to human morality, as is attempted in Ruse's works. Ruse's claims that his position is an *empirical* one are inconsistent with the actual way in which he presents and defends his theory. The only empirical evidence provided is that which supports biological or effective altruism. However, connections between effective and intentional altruism, and between intentional altruism and morality, are also made. As to the truth of these connections there are reasons for serious doubt. First, in order for a connection between effective and intentional altruism to be maintained, intentional altruism itself must produce behavioural effects in line with effective altruism. There are significant barriers to this, however. Not only do effects often fail to square with our intentions, but intentional altruism continues to operate outside of the crucial boundaries which are in place

with respect to biological altruism. Outside of those boundaries, intentional altruism is significantly maladaptive. Intentional altruism as a whole, then, is doubtful as an adaptive strategy. Second, in order for the connection to morality to be made, the psychological illusion of objective guidelines must be an efficient and adaptive means of producing behaviour in line with effective altruism. Ruse does not recognise the existence of a broad range of alternatives. These are simpler, and are actually found in nature, as opposed to the idea of illusory objective guidelines which would be extremely psychologically complicated, is not found in any other aspect of human or other animal existence, and is entirely speculative. The support that is provided for the hallucinatory mechanism for altruism is the peculiarly non-self-regarding nature of altruism, but this claim confuses effective altruism with intentional altruism. We are disposed to be 'altruistic' in certain ways, according to sociobiology, in the same way and for the same reason that we are disposed to be 'selfish' in other ways. Both tend to contribute to the persistence of one's own genetic information. There is no peculiarity of altruism, then, that should require an outlandish mechanism to assure that behaviour. There are also internal problems with the idea that illusory objective guidelines could be adaptive, such as the 'situation-action' time lag due to the reflection and deliberation that is required in order to make moral decisions, and the fact that objective guidelines often fail to produce behaviours. Therefore, not only is there not a valid connection between effective altruism and intentional altruism, but Ruse's idea of illusory objective guidelines is not a plausible biological hypothesis as to the way in which altruistic behaviour could be assured.

In addition, Ruse's secondary argument, regarding the contingency of morality on the evolutionary process, fails to establish his conclusion that morality cannot be truly objective. His argument depends on at least two assumptions: that there is no adaptive value to a genuinely objective

morality, and that something with no adaptive value would not become actualised in human psychology. Ruse's own theory seems to undermine the first assumption, but even if it is true the second assumption is an abuse of evolutionary theory. There is no warrant for the claim that something cannot exist if it is not adaptive.

There are also arguments from the perspective of moral philosophy which tell against Ruse's theory. Since Ruse is claiming to provide a descriptive account of the moral guidelines which humans do have, any significant discrepancies between his theory and the moral beliefs of people is evidence against the idea that what Ruse is describing can be considered morality. In fact, many such discrepancies are found. For instance, few would claim that it is moral to withhold moral considerability from those who do not exhibit altruistic behaviour themselves, either by their own choice or for one of many reasons not in their control. On Ruse's theory, however, such exclusivity must be a vital aspect of morality if it is to be a vehicle for effective altruism. On Ruse's theory the identity of the individual in a situation is of vital importance; but in morality it tends not to be. This same argument can be repeated with respect to nonhuman entities, and even oneself. With regard to the latter, the history of moral philosophy is replete with discussion of the relevance of duties to oneself. In fact, many significant theories present this as the root of all morality. Ruse, in order for his theory to be sound, must deny the fact that people do have such moral beliefs. Other normative discrepancies between Ruse's ethical theory and the moral experience of many people are found in the particular types of actions which are or could be sanctioned from the perspective of effective altruism. All of these arguments show that as a description of the moral guidelines embraced by people, Ruse's theory rules out many things which are widely regarded as moral principles, and claims many things to be morally obligatory or permissible which are widely regarded as immoral.

At the meta-ethical level, Ruse's theory raises important issues which are not adequately dealt with. First, his argument for the contingency of moral principles is based on an extraordinary and radical conception of the objectivity people ascribe to normative moral guidelines. Second, necessary to his theory is a strict emotivism whereon moral guidelines are perceived as sentiments and acted upon because of their force. Ruse does not argue cogently for this extreme and controversial position. Actually, he argues in a circle, as the position plays a role in both the 'empirical' basis for and the meta-ethical conclusion of his theory. The illusory nature of objective moral guidelines is a foregone conclusion, therefore, given his initial assumptions. Third, central to Ruse's theory is that meta-ethics as a discipline is wrongheaded because it deals with the nature of moral guidelines, which themselves are hallucinations. Ruse thus presents his own meta-ethical theory as the only undeceived meta-ethical theory as a matter of assumption, and by so doing has incorporated into his theory the instant refutation of all other meta-ethics. This begs the question, and raises Ruse's theory beyond the bounds of rational argument. Any possible moral philosophical problems with his theory can simply be considered by him as part of the illusion of morality (if it is contrary) or as part of the reality of it (if it is advantageous). Fourth, and building on the previous arguments, Ruse's theory of morality is at its root a matter of describing what people do consider to be morality. This is the content of the illusion which he claims to be widespread since it is rooted in the genetic information of humans. However, what Ruse has characterised as the illusion is so different from what many people actually consider morality to be about, that there seems no reason to consider what he describes to be *morality*.

These lines of argument, both the scientific and the moral philosophical, show there to be fundamental problems with Ruse's theory. As a whole, the connections that are made between effective altruism,

intentional altruism, and human morality are not supported by empirical evidence, but on the contrary are very dubious. The incongruencies between effective and intentional altruism, the unlikelihood of objective guidelines being the vehicle for the former, and the unsoundness of the arguments in support of these points, render this sociobiological account of morality highly implausible. Moreover, the differences between the moralities embraced by people and the picture provided by Ruse's theory are so great that one must conclude that which is described in the theory not to be morality. This is true at the normative level, where people's beliefs diverge widely from that which they would have to be in order for Ruse's theory to be true. It is also true at the meta-ethical level, where problems raised with Ruse's theory are overcome only by begging the question or misrepresenting the nature of the moral beliefs held by people.

The sociobiological thesis which formed the empirical basis for Ruse's moral philosophy was simply that there are good evolutionary reasons for humans and other social animals to behave in certain ways which do not directly benefit themselves. One reason for this is the incongruency between the set of actions that promote the persistence of one's genes and the set of those that promote one's own individual welfare. Another reason for this is that certain actions can benefit oneself in the long run even though they are a net disadvantage immediately. Perhaps this sociobiological information can explain why we are psychologically motivated to care for our young, to help our relatives, and to co-operate in society. Sociobiology can perhaps provide an explanation as to why being kind to those who are kind to us is not generally difficult, whereas being kind to those who are indifferent or hostile to us usually is. Sociobiology gives some content to the idea that it is 'natural' to be more caring towards one's own family and community than to those far away. It may provide a biological explanation as to why such things as patriotism, xenophobia, cliques, *esprit de corps*,

nepotism, concern for reputation, friendship, and loyalty are prevalent aspects of our society. It may explain why people so easily hate hypocrites and traitors, and why those who repay evil with kindness are often branded as spineless or feeble-minded. Sociobiology may provide an explanation why we have a *psychological tendency* towards these things; but there seems no reason at all to suspect that this psychological tendency is what our *morality* consists in. Many of those things can be morally right or at least permissible, whereas many others be morally wrong. Psychological tendency may tell us what comes easy (probabilistically speaking), and so we may now begin to understand why some things are so easily done whereas others are so difficult. To confuse this with morality, however, is to claim that whatever comes easy, or whatever one has a psychological tendency to do, must be right. Perhaps some hold this position; but surely it should not be foisted upon us as having any basis in science.

A question left open for discussion at this point is whether there is a theme in this critique that can be developed into a more generally applicable argument relative to synthetic naturalism. To provide an answer to this question is the project of the next and final chapter.